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A Wise man buildeth his House upon a Rock, so y^t. when the raine descend and y^e. floods come, and y^e. Winds blow and beat thereon it falleth because it is founded upon a Rock. S^t. Matt. Ch. VII Ver. 24, 25.

THE

Gentleman *and* Tradeſman's COMPLEAT ASSISTANT;

Or, the Whole ART of

Meaſuring and Eſtimating, made Eaſy.

IN THREE PARTS.

PART I.

Contains, the Names and exact Prices of all Artificers Work in General, relating to Building, viz. ſuch as BRICKLAYERS, CARPENTERS, JOINERS, CARVERS, PLAISTERERS, PAINTERS, MASONS, PLUMBERS, GLAZIERS, SLATERS, PAVIOURS, SMITHS, &c.

PART II.

Contains, the Method of ſquaring Dimenſions, or meaſuring the ſaid Artificers Works at large, thro' all their various Branches, both by Croſs-Multiplication and Inſpectionary Tables, to the Extent of an hundred Feet ſquare, including Tables, which ſhew the Number of Squares, ſquare Yards, and alſo the Square Root of any Number of Feet, &c. whatſoever required.

PART III.

Contains, Geometrical Definitions of Lines, Angles, &c. with the moſt uſeful and neceſſary PROBLEMS, or the Rudiments of PRACTICAL GEOMETRY, Menſuration of SUPERFICIES, &c.

Illuſtrated with COPPER-PLATES:

The Whole made perfectly eaſy and intelligible to the meaneſt Capacity.

By J. LEADBEATER, and ASSISTANTS.

The SECOND EDITION.

LONDON:

Printed by SAMUEL CHANDLER,

For H. WEBLEY, Bookſeller, in Holborn, near Chancery-Lane; and W. TODD, Accomptant, in Adam and Eve Court, oppoſite Poland-Street, Oxford-Road.

M.D.CC.LXIX.

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THE

PREFACE.

IF we do but conſider what abſolute neceſſity the ART of MEASURING is, in the Work of BUILDING, ſuch as the buying in Materials thereunto belonging, as BOARD, TIMBER, STONE, &c. and alſo, the meaſuring of the ſeveral Artificers work employed therein (which meaſure their reſpective works, either by the foot or yard, ſquare of 10 feet, rod, or the like); and alſo, how few of the great number of the ſaid Artificers are capable of meaſuring, valuing, or eſtimating their own work; not only the Journeymen, or labouring part of Artificers, but even ſome Maſters themſelves, perhaps, labour under this misfortune, and can no-ways be made properly capable of underſtanding the ſame, without a Tutor.——And again, conſidering the great benefit which will redound to Gentlemen and Others, who have occaſion to buy materials for (and alſo compleat the charge of their building) themſelves, in every particular. In conſideration of which, I have here, for their great convenience and advantage (together with able

Aſſiſtants, in the practical Parts of Building, &c.) given the Names, Rates, Qualities, and Quantities of the ſeveral Materials thereunto belonging, in the moſt plain and familiar way; with the neareſt eſtimate poſſible, of their prices, and of the works of the ſeveral Artificers employed in Building; and that, not only as a Taſk-Maſter, but at ſuch moderate rates, as will, I preſume, be found both reaſonable and agreeable to all thoſe concern'd therein; by which aſſiſtance, Eſtimations, Valuations, and Contracts, may be made, without the leaſt diſadvantage to either party.

I have alſo, in the SECOND PART hereof, taken the pains to exemplify, at large, (by the moſt familiar Method of ſquaring Dimenſions) the works of the ſaid Artificers, through all their various branches, both by Croſs-Multiplication, and alſo by inſpectionary Tables, ready calculated, which ſhew the exact Content of any Meaſurement taken in Feet, Inches, and Parts, to the extent of fifty (or, if required, to an hundred) feet ſquare; including alſo, Tables of Cubical, or Solid Meaſure, with others, for finding the number of Squares, Yards, Square and Square Root, of any number of Feet, &c. whatſoever required; by which help, any perſon, only acquainted ſo far with figures as to be able to add two numbers together, may meaſure either Board, Timber, or Stone, and alſo Bricklayers, Carpenters, Joyners, Plaiſterers, Painters, Glaziers, Paviours, and Slaters works, with the greateſt eaſe and exactneſs, by only taking the Length

Length and Breadth of ſuch work (whatever it be) by a two-foot rule, divided into Inches and Parts.

The THIRD PART, contains a choice Collection of Definitions and Problems, preparatory to PRACTICAL GEOMETRY, a Science of the greateſt importance to all Artificers in general, if but well underſtood, being familiarly adapted to the unexperienced, in moſt reſpects whatſoever, conducing to their ſpeedy improvement; and amongſt which will be found, ſeveral particulars of the greateſt uſe and benefit, never before treated of by any Authors whatſoever: therefore, in conſideration of this Work, the Reader will find no pains hath been ſpared to render the ſaid BOOK, not only in particular, but alſo, generally uſeful; and doubt not, but what it will meet with approbation from the Public, having already (as a proof of its Utility) been favoured with ſeveral Subſcriptions, ſome of which, are perſons of great experience and repute amongſt thoſe of the Building branch, who have expreſs'd their higheſt opinion thereof in its favour; by which, we have this great encouragement now to hope, that the ſame will undoubtedly prove as intended, viz. A uſeful and profitable ASSISTANT to all whomſoever it may concern; which, that it may, is the hearty deſire of the AUTHORS.

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CONTENTS.

PART I.

CHAP.

		Page
1	THE prices of Bricklayers Work	1
2	Of Carpenters and Joiners Work	20
3	Of Plaiſterers Work	41
4	Of Carvers Work	43
5	Of Painters Work	44
6	Of Paviours Work	47
7	Of Maſons Work	48
8	Of Plumbers Work	51
9	Of Glaziers Work	54
10	Of Smiths Work	58
11	Of ſquaring Dimenſions; or, the Works relating to all the above Artificers branches, exemplified at large, both by Examples in Croſs-Multiplication, and inſpectionary Tables, from	59 to 105
	A Table, ſhewing the value of any kind of Works, perform'd after the rate of ſo much per Foot, Yard, Square, &c. or Merchandizing-Ware, at any given price whatſoever; from 1 farthing, to 10 pounds, the integer	106
	Explanation and Uſe of the above Table, by various Examples	111

PART II.

CHAP. I.

	Tables of Superficial, or Flat Meaſure, ready calculated and caſt up, from 1 to 50; or (if required, only by the help of Addition) to an hundred foot ſquare, from	122 to 181
	A Table of Cubical, or Solid Meaſure	182

A Table, ſhewing the number of Squares of 100 feet, contain'd in any number of feet —— 192
A Table, ſhewing the ſquare Yards contain'd in any number of feet —— —— —— 194

PART III.

CHAP. I.

An introduction to Menſuration, &c. —— —— 199
An explanation of the Square Root —— —— 201
How to make a true Square, by two Methods — 206
To find the length of the Hip-Rafter of a Building, both inſtrumentally and arithmetically; the roof being either a ſquare, bevil, or flat pitch — 210

CHAP. II.

Of Geometrical Definitions, &c. — —— 142
3 Of Geometrical Problems —— —— 219
4 Menſuration of Superficies —— —— 225

ERRATA.

Page 5. line 12. for 7 s. to 10s. per rod, read 7 l. to 10 l
page 99. at the bottom, for 2 19 9 (the content of the Sum) read 2 inches, 9 parts, 9 ſeconds.

THE

Gentleman *and* Tradeſman's

COMPLEAT ASSISTANT, &c.

PART I.

CHAP. I.

Of BRICKLAYER'S *Work.*

The different Dimenſions and Sizes of Bricks.

THERE are ſeveral ſizes of bricks, yet the ſtatute allow but one; the ſcantlings of which are theſe, viz. the moulds in which bricks are uſually made, ought to be in length (in the inſide) 9 inches, in breadth 4 inches and an half, and in depth, or thickneſs, 2 inches and a half, of which ſize the brick ought to be; (tho' ſeldom found to hold out ſo)

for the drying and burning will abate ſomething in the thickneſs, but very little in the breadth; and in the length inconſiderable. Brick-work is meaſured by the rod or perch, containing 16 feet and an half, ſuperficial meaſure, of which I ſhall ſpeak more at large hereafter.

The quantity of lime and ſand accounted ſufficient to make mortar to lay 4500 bricks, (or one rod of wall) is one hundred and a quarter of lime, and two load and an half of ſand; the price of which, are both ſomewhat various; and the meaſure of lime, in ſome places, is eight heap'd buſhels. About London, lime is uſually 9s. the hundred, and ſand about 3s. 6d. per load.

Of Tiles; their Quality, Size, and Make.

Tiles are of divers kinds; but for building, principally, two ſorts, viz. plain, and ridge tiles: The length of a plain tile, is uſually 10 inches and an half, its breadth 6 inches, and its thickneſs near three quarters of an inch.

Of their Rate and Scale.

Tiles are rated and ſold, after the manner of bricks, viz. by the thouſand; about 22 or 23 hundred weight groſs, they account a load; one tile weighs about two pounds and an half; ſo that about 1000 tiles make a load. Tiling is meaſured by the ſquare of 10 feet every way: The quantity of mortar required to every ſuch

ſquare

ſquare of tiling, is about a quarter part of what is uſually allowed for a rod of brick-work; but it ought to be much dryer, and better wrought.

Of Laths; their Scantlings and Quality.

Laths are principally of two ſorts, allowed by ſtatute; the one of 5 feet long, the other, of 4 feet; thoſe of 5 feet, have 5 ſcore, or 100 in the bundle; the other, of 4 feet, have ſix ſcore, or 120 in the bundle; and of either of theſe lengths, there are three ſorts: firſt, Heart of Oak; ſecondly, Sap-laths; and, thirdly, Deal-laths: as to the reaſon of theſe different lengths, the goodneſs of the ſtuff of which they are made, &c. is, by reaſon all rafters, upon which the laths are nail'd, are not ſpaced at an equal diſtance; and for the goodneſs of the ſtuff, thoſe of Heart of Oak being the beſt, are moſt neceſſary for tiling; the ſecond ſort of Sap-laths are for plaiſtered walls; and thoſe of Deal, for cielings.

Of the Rate and Price.

In reſpect to the prices of laths, it muſt needs be various, ſeeing there is ſo great a diſparity in the commodity; but in general, are from 1 s. to 2 s. per bundle; the Heart laths are about 2 s. the bundle.

Of the Diſtance Laths are uſually laid upon the Roof of a Houſe one from another.

The diſtance in laying of laths one from another, is various, differing more in ſome places than in others; but 3 inches and an half, and 4 inches, are uſual diſtances, with a counrer-lath between rafter and rafter; or two, if the rafters ſtand at a very large diſtance. The quantity of nails required for laying on a bundle of laths of 5 feet long, are 500; and to the other of 4 feet long, 600, ſix ſcore to the hundred; and the number of laths and tiles ſufficient to cover a yard ſquare, (that is, 3 feet every way) are three-ſcore tiles laid at a 7-inch gauge; but tiling (as I ſaid before) is meaſured by the ſquare, ſo that it will require 665 tiles, or nearly one peck of pins, and one bundle of laths; and one tiler, in a day, will cover ſuch a ſquare.

The Prices of Bricks.

I. *Of* FOUNDATION.

	£.	s.	d.
Foundations digging, per yard cube	0	0	6
Carrying away ditto, per yard ditto	0	1	9
Red ſtock bricks per thouſand —	1	10	0
Grey ditto ditto ——	1	12	0
Place bricks ditto ——	0	17	6
Mixt bricks, red and grey, ditto —	1	2	0
Cutting bricks for rubb'd and gauged-work, per thouſand, from 40s. to	2	0	0
Plain tiles per thouſand ——	1	1	0

Pan

	£.	s.	d.
Pan-tiles per thouſand ——	3	0	0
Pan-tiles, Dutch glaz'd, per hundred, ditto —— ——	0	8	0
Gutter tiles, per hundred ——	0	17	0
Brick-work done with all the place-brick, in London, per rod, or 272 feet, at the ſtatute thickneſs of a brick and an half thick ——	6	10	0
The fronts faced with grey ſtock brick, per rod ditto ——	7	10	0
Fronts, with rubb'd returns, excluſive of the arches, per rod, from 7l. to	10	0	0
One rod of brick-work, at the ſtandard thickneſs of a brick and an half, will require 4500 bricks nearly, one hundred and a quarter of lime, and two load and an half of ſand —— ——	0	00	0
Gauged red and grey arches, ſet in putty, per foot ſuperficial	0	1	8
Arches of any ſort, rubbed with fine red bricks, per foot, from 16d. to	0	1	6
Workmanſhip only, from 10d. to	0	1	0
Rubbed returns, per foot ſuperficial	0	0	4
Groins cut to arches, per foot running	0	0	8
Plain facios rubbed, per foot	0	1	2
Workmanſhip only, ditto	0	0	9
Cornices, with fine rubbing bricks, from 3s. 6d. per foot, lineal meaſure, to —— ——	0	4	10
Workmanſhip only, from 3s. to	0	3	10

Under-

	£.	s.	d.
Underpinning, per foot, running, from 6d. to —— —	0	0	7
Workmanſhip only, from 1d. to	0	0	1½
Digging and bricking of new wells, per foot, the depth only conſidered	0	7	6
Workmanſhip only ——	0	2	10
Place bricks paving, laid flat and dry, per yard ſuperficial, or 9 ſquare feet —— ——	0	1	6
In mortar, per yard ditto ——	0	1	8

Note, That 32 ſtatute bricks laid flat, or 64 edge-ways, will pave a yard ſquare.

Twelve-inch tile paving, per yard	0	3	10
Ten-inch ditto per yard ——	0	3	2
Plain tiling per ſquare, or 100 ſuperficial feet —— —	1	8	0
Workmanſhip only, from 3s. 6d. to	0	4	0
To find all materials, excluſive of tiles, per ſquare — —	0	11	0
Old plain tiling, per ſquare, ripped	0	14	0
Pan-tiling, not pointed —	0	18	0
Ditto pointed, per ſquare - -	1	1	0
Workmanſhip, when pointed, per ſquare — ——	0	2	0
Pan-tiling with old pantiles, per ſq.	0	10	6
Pan-tiling, Dutch glazed, per ſquare	1	12	6
Engliſh ditto, per ſquare —	1	9	0

The materials required for a ſquare of plain tiling, at a 6 inch gauge, is ſeven hundred and ſixty tiles, one peck of tile-pins, two buſhels of lime, five buſhels of ſand, one bundle of laths, and between five and ſix hundred of nails. One ſquare is commonly accounted a day's work of a trowel-man and labourer.

A TABLE

A TABLE of BRICK-WORK, reducing any Thickneſs thereof, to the cuſtomary Thickneſs of one Brick and an half, ready caſt up.

The Thickneſs of the Wall in Bricks and half Bricks.

| ½ a brick | 1 brick | 1 ½ brick | 2 bricks

The Wall reduced to One brick and an half.

The number of rods contained upon the ſuperficies of the walls.	½ a brick			1 brick			1 ½ brick			2 bricks		
	r.	q.	f.	r.	q.	f.	r.	q.	f.	r.	q.	f.
1 quar.	0	0	22	0	0	45	0	1	0	0	1	22
2 quar.	0	0	45	0	1	2	0	2	0	0	2	45
3 quar.	0	1	00	0	2	0	0	3	0	1	0	00
1	0	1	22	0	2	45	1	0	0	1	0	22
2	0	2	45	1	1	22	2	0	0	2	2	45
3	1	0	00	2	0	00	3	0	0	4	0	00
4	1	1	22	2	2	45	4	0	0	5	1	22
5	1	2	45	3	1	22	5	0	0	6	2	45
6	2	0	00	4	0	00	6	0	0	8	0	00
7	2	1	22	4	2	45	7	0	0	9	1	22
8	2	2	45	5	1	22	8	0	0	10	2	45
9	3	0	00	6	0	00	9	0	0	12	0	00
10	3	1	22	6	2	45	10	0	0	13	1	22
11	3	2	45	7	1	22	11	0	0	14	2	45
12	4	0	00	8	0	00	12	0	0	16	0	00
13	4	1	22	8	2	45	13	0	0	17	1	22
14	4	2	45	9	1	22	14	0	0	18	2	45
15	5	0	00	10	0	00	15	0	0	20	0	00
16	5	1	22	10	2	45	16	0	0	21	1	22
17	5	2	45	11	1	22	17	0	0	22	2	45
18	6	0	00	12	0	00	18	0	0	24	0	00
19	6	1	22	12	2	45	19	0	0	25	1	22
20	6	2	45	13	1	22	20	0	0	27	2	45
21	7	0	00	14	0	00	21	0	0	28	0	00

A TABLE of BRICK-WORK, reducing any Thickneſs thereof, to the cuſtomary Thickneſs of one Brick and an half, ready caſt up.

The Thickneſs of the Wall in Bricks and half Bricks.

| 2 ½ bricks | 3 bricks | 3 ½ bricks | 4 bricks.

The Wall reduced to One Brick and an half.

The number of rods contained upon the ſuperficies.	r. q. f.	r. q. f.	r. q. f.	r. q. f.
1 quar.	0 1 45	0 2 0	0 2 22	0 2 45
2 quar.	0 3 22	1 0 0	1 0 45	1 1 22
3 quar.	1 1 00	0 2 0	1 3 00	2 0 00
1	1 2 45	2 0 0	2 1 22	2 2 45
2	3 1 22	4 0 0	4 2 45	5 1 22
3	5 0 00	6 0 0	7 0 00	8 0 00
4	6 2 45	8 0 0	9 1 22	10 2 45
5	8 1 22	10 0 0	11 2 45	12 1 22
6	10 0 00	12 0 0	14 0 00	16 0 00
7	11 2 45	14 0 0	16 1 22	18 1 45
8	13 1 22	16 0 0	18 2 45	21 1 22
9	15 0 00	18 0 0	21 0 00	24 0 00
10	16 2 45	20 0 0	23 1 22	26 2 45
11	18 1 22	22 0 0	25 2 45	29 1 22
12	20 0 00	24 0 0	28 0 00	32 0 00
13	21 2 45	26 0 0	30 1 22	34 2 45
14	23 1 22	28 0 0	32 2 45	37 1 22
15	25 0 00	30 0 0	35 0 00	40 0 00
16	26 2 45	32 0 0	37 1 22	42 2 45
17	28 1 22	34 0 0	39 2 45	45 1 22
18	30 0 00	36 0 0	42 0 00	48 0 00
19	31 2 45	38 0 0	44 1 22	50 2 45
20	33 1 22	40 0 0	46 2 45	53 1 22
21	35 0 00	42 0 0	49 0 00	56 0 00

A TABLE of BRICK-WORK, reducing any Thickneſs thereof, to the cuſtomary Thickneſs of one Brick and an half, ready caſt up.

The Thickneſs of the Wall in Bricks and half Bricks.

| 4 ½ bricks | 5 bricks | 5 ½ bricks | 6 bricks

The Wall reduced to One brick and an half.

The number of rods contained upon the ſuperficies.	r. q. f.	r. f. q.	r. q. f.	r. q. f.
1 quar.	0 3 0	0 3 32	0 34 5	
2 quar.	1 2 0	1 2 45	1 3 22	
3 quar.	2 1 0	2 2 0	2 3 0	
1	3 0 0	3 1 22	3 2 45	
2	6 0 0	6 2 45	7 1 22	
3	9 0 0	10 0 0	11 0 0	
4	12 0 0	13 1 22	14 2 45	
5	15 0 0	16 2 45	18 1 22	
6	18 0 0	20 0 0	22 0 0	
7	21 0 0	23 1 22	25 2 45	
8	24 0 0	26 2 45	29 1 22	
9	27 6 0	30 0 0	33 0 0	
10	30 0 0	33 1 22	36 2 45	
11	33 0 0	36 2 45	40 1 22	
12	36 0 0	40 0 0	44 0 0	
13	39 0 0	43 1 22	47 2 45	
14	42 0 0	46 2 45	51 1 22	
15	45 0 0	50 0 0	55 0 0	
16	48 0 0	53 1 22	58 2 45	
17	51 0 0	56 2 45	62 1 22	
18	54 0 0	60 0 0	66 0 0	
19	57 0 0	63 1 22	69 2 45	
20	60 0 0	66 2 45	73 1 22	
21	63 0 0	70 0 0	77 0 0	

Expla-

Explanation of the foregoing Tables.

At the head of the table you have the thickneſs of any wall in bricks and half bricks, for any thickneſs; from half a brick to ſix bricks thick, under ſeveral columns; and in the firſt, towards the left hand, you may find the number of rods that any wall contains upon the ſuperficies thereof, from 1 quarter of a rod to 21 rods; and in ſeveral columns, you have the rods, in the firſt column, reduced to the cuſtomary thickneſs of one brick and an half, as will beſt appear by the following examples.

The Uſe of the TABLE.

EXAMPLE I.

If a wall, meaſured upon the ſuperficies thereof, be found to contain 9 rods, and the wall be 2 bricks and an half thick, how many rods doth the ſame wall contain, it being reduced to the cuſtomary thickneſs of one brick and an half?

Look for 9 rods (the meaſure of the wall upon the flat) in the firſt column towards the left hand, and find 2 ½ bricks (the thickneſs of the wall at the head of the table, and againſt 9 in the firſt column, and under 2 ½ bricks on the head, you will find 15 rod; and ſo much doth the wall contain.

And ſo by the following table you may find, that if a wall upon the flat do contain 13 rod, if that wall be

Thickneſs		r.	q.	f.
½		4	1	22
1		8	2	45
1½		13	0	0
2		17	1	22
2½	Bricks thick, it will contain,	21	2	45
3	being reduced to one brick	26	0	0
3½	and an half,	30	1	22
4		34	2	45
4½		39	0	0
5		43	1	22
5½		47	2	45

Contents reduced.

EXAMPLE II.

If a wall be 4 bricks thick, and contains 17 rod upon the flat, how much doth it contain, being reduced?

Look for 17 in the firſt column, and againſt under 4 bricks you will find 45 rod, 1 quarter, and 22 feet; and ſo much doth the wall contain, being reduced; and ſo if a wall

contain						r.	q.	f.
12	rod upon the	3½	thick, it will con-	28	0	0
17	flat, and be	2	tain, being re-	22	2	45
7		5	duced,	23	1	22

EXAM-

EXAMPLE III.

If a wall upon the flat do contain 13 rod and 3 quarters, and be 4 ½ bricks thick, how many rod ſhall that wall contain, when it is reduced?

	r.	q.	f.
13 rod upon the flat, and 4 ½ bricks thick, is — —	39	0	0
3 quarters of a rod, and 4 ½ bricks thick, is — —	2	1	0
13 ¼ rods upon the flat, reduced, is	41	1	0

EXAMPLE IV.

If a wall upon the flat do contain 8 rods, and be 9 ½ bricks thick, how much doth that wall contain, being reduced?

In the table (at the head thereof) you cannot find 9 ½ bricks, but may find 5 ½ and 4 bricks thick, which, together, make 9 ½ thick; then by the table,

	r.	q.	f.
8 rod by 5 ½ bricks thick, reduced, is	29	1	2
8 rod at 4 bricks, reduced, is —	21	1	2
8 rod at 9 ½, reduced, will be —	50	2	4

therefore, theſe examples, I preſume, may be ſufficient to ſhew the great uſe of theſe tables.

A second Table of Brick-work.

sq. feet	½ brick	1 brick	1 ½ brick	2 bricks	2½ bricks
1	5	11	16	22	27
2	11	22	33	44	55
3	16	33	49	66	82
4	22	44	66	88	110
5	27	55	82	110	137
6	33	66	99	132	165
7	38	77	115	154	193
8	44	88	132	176	220
9	49	99	148	198	248
10	55	110	165	220	273
11	60	121	181	242	303
12	66	132	198	264	330
13	71	143	215	286	358
14	77	154	231	308	386
15	82	165	248	330	413
16	88	176	264	352	441
17	93	187	281	375	468
18	99	198	297	397	496
19	104	209	314	419	523
20	110	220	330	441	551
21	115	231	347	463	579
22	121	242	363	485	606
23	126	253	380	507	634
24	132	264	397	529	661
25	137	275	413	551	689
26	143	286	430	573	717
27	148	297	446	595	744
28	154	308	463	617	771
29	159	319	479	639	799

A second Table of Brick-work continued.

sq. feet	½ brick	1 brick	1½ brick	2 bricks	2½ bricks
30	165	330	496	661	826
31	170	341	512	683	854
32	176	352	529	705	882
33	181	363	545	727	909
34	187	375	562	750	937
35	193	386	579	772	964
36	198	397	595	794	992
37	204	408	612	816	1019
38	209	419	628	838	1047
39	215	430	645	860	1075
40	220	448	661	882	1102
41	226	459	678	904	1130
42	231	470	694	926	1157
43	237	481	711	948	1185
44	242	492	727	970	1212
45	247	503	744	992	1240
46	252	514	761	1014	1268
47	258	525	777	1038	1295
48	263	536	794	1058	1323
49	269	547	810	1080	1350
50	274	558	827	1102	1478
51	280	569	843	1125	1505
52	285	580	860	1147	1533
53	291	591	878	1169	1561
54	296	602	893	1191	1588
55	302	613	909	1213	1616
56	307	624	926	1235	1643
57	313	635	943	1257	1671
58	318	646	959	1279	1698

A second Table of Brick-work continued.

sq. feet	½ brick	1 brick	1 ½ brick	2 bricks	2 ½ bricks
59	324	657	976	1301	1726
60	329	668	992	1323	1754
61	335	679	1009	1345	1781
62	340	696	1025	1367	1809
63	346	701	1042	1389	1836
64	351	712	1058	1411	1864
65	357	723	1075	1433	1891
66	362	734	1091	1455	1919
67	368	745	1108	1477	1947
68	373	756	1124	1500	1974
69	379	768	1141	1522	2002
70	384	779	1158	1544	2029
71	390	790	1174	1566	2057
72	395	801	1191	1588	2085
73	401	812	1207	1610	2112
74	406	823	1224	1632	2140
75	412	834	1240	1654	2168
76	417	845	1257	1676	2196
77	423	856	1273	1698	2224
78	428	867	1290	1720	2252
79	434	878	1306	1742	2280
80	439	889	1323	1764	2307
81	445	900	1340	1786	2335
82	450	911	1356	1808	2362
83	456	922	1373	1830	2390
84	461	933	1380	1852	2417
85	467	944	1406	1875	2445
86	473	955	1422	1897	2473
87	478	966	1439	1919	2500

A

A second Table of Brick-work continued.

sq. feet	½ brick	1 brick	1 ½ brick	2 bricks	2 ½ bricks
88	484	977	1455	1941	2528
89	489	988	1472	1963	2555
90	495	999	1488	1985	2583
91	500	1010	1505	2007	2610
92	506	1021	1522	2029	2638
93	511	1032	1538	2051	2666
94	517	1043	1555	2073	2693
95	522	1054	1571	2095	2721
96	528	1065	1588	2117	2748
97	533	1076	1614	2139	2776
98	538	1087	1621	2161	2803
99	543	1098	1637	2183	2831
100	549	1109	1654	2205	2859
200	1098	2219	3309	4411	5718
300	1647	3329	4962	6616	8577
400	2196	3438	6616	8822	11436
500	2746	5548	8270	11028	14295
600	3295	6658	9924	13234	17154
700	3844	7767	11578	15440	20013
800	4393	7877	13232	17646	22872
900	4942	8986	14887	19851	25731
1000	5492	10096	16541	22057	28590
2000	10984	20193	33082	44114	57181
3000	16476	30290	49623	66171	85771
4000	21968	40387	66164	88228	114362
5000	27461	50484	82705	110285	142953
6000	32953	60580	99247	132342	171543
7000	38445	70677	115788	154399	200134
8000	43937	80774	132329	176456	228725

A second Table of Brick-work continued.

sq. feet	½ brick	1 brick	1½ brick	2 bricks	2½ bricks
9000	49429	90871	148870	198513	257315
10000	54922	100968	165411	220570	285906
11000	60414	111065	181952	242627	314496
12000	65906	121161	198494	264684	353087
13000	71398	131258	215035	286741	371678
14000	76890	141355	231576	308799	400268
15000	81383	151452	248117	330856	428859
16000	86875	161549	264658	352913	457450
17000	92367	171646	281199	374970	486040
18000	97859	181742	297741	397027	514631
19000	103352	191839	314282	419084	543221
20000	108845	201936	330824	441141	571812
21000	114337	212033	347365	463198	600403
22000	119829	222130	363906	485255	628993
23000	124321	232227	380447	507312	657584
24000	129813	242323	396989	529369	686175
25000	134306	252420	413530	551426	714765

Explanation of the second Table of Brick-work.

This table readily shews you how many bricks are sufficient to build a piece of brick-work, containing any number of feet or thickness, from one foot to 25000; and from half a brick thick, to two and an half, and consequently (by Addition only) to any thickness required, and at the rate of 4500 bricks to a rod, at the statute thickness of a brick and an half.

EXAMPLE.

How many bricks will build a brick wall 75 foot in length, 8 foot in height, and a brick and an half thick?

First, multiply 75 the length, by 8 the height, and the product is $\frac{8}{600}$ feet, the superficial content of the said wall in feet.

Secondly, seek in the first column of the table for 600 feet, (which you will find in the fourth page of the table) against which, under 1 brick and an half at top, is 9924, the number of bricks required, at 1 $\frac{1}{2}$ brick thick.

EXAMPLE II.

How many bricks are required to build a piece of brick work 100 feet long, 15 feet high, and two bricks and an half thick?

Multiply thus 100 by 15

15

500
100

and the superficial content is 1500 feet.

But whereas this number cannot be found all at once in the table, you must take it at twice,

thus, Seek, as before directed, for the neareſt even number in the firſt column of the table, which you will find to be 1000; the number oppoſite, under 2 ½ bricks, you will find to be 28590; then look back in the column for 500, the number yet wanting, and you will find oppoſite, in the ſame column, 14295; which being added,

thus,	bricks
1000 feet, at 2 ½ bricks thick, is	28590
500 feet, at ditto ditto is	14295
1500 feet, at 2 ½ bricks thick, is	42885 as required:

further examples would be unneceſſary.

CHAP. II.

Of Carpenters and Joiners Work.

CArpenters commonly work by the ſquare of 10 foot, in erecting their carcaſes; that is, framing and ſetting up; with their partitions, floors, rafters, and ſuch like; and their work is to be valued according to the goodneſs of the timber, the quantity thereof, &c. the particulars of which, you have here an account of at large, with the prices thereof; both with the materials included, or where the workmanſhip only is required.

And firſt, of Framing.

	£.	s.	d.
For framing the outſide carcaſe of a houſe, where the hewing and ſawing are included; workmanſhip per ſquare, containing 100 ſuperficial feet - - - -	0	11	0

For

	£.	s.	d.
For ditto, where hewing and ſawing is omitted —— ——	0	6	6
For ditto, with old timber, ſtreighted on both ſides; workmanſhip only	0	7	6
Floors per ſquare, work only, from 4s. to —— ——	0	4	6
Where hewing and ſawing are included, at per ſquare —	0	10	6
Partitions per ſquare, work only, from 3s. 6d. to — —	0	4	6
Where hewing and ſawing are included, per ſquare, from 7s. 6d. to	0	8	6
Roofs, hewing and ſawing included, per ſquare, according to the ſcantling of the timber, from 8s. to	0	10	6
The ſame, excluſive of hewing and ſawing, from 4s. 6d. to ——	0	5	0
Any ſcantlings of oak-timber, cut for building, in or about London, per foot, cubical meaſure —	0	2	4
Rafters, feet and eves, board-work and materials, at per foot, running meaſure —— ——	0	0	4½
Framing naked floorings with binding joiſts of oak in London, work only, per ſquare ——	0	9	0
The ſame of Fir, per ſquare —	0	8	0
Ditto with girders and joiſts of Oak, per ſquare —— —	0	8	6
Ditto with Fir, per ſquare —	0	7	0

Single

	£.	s.	d.
Single roofs, plates included, of Oak, workmanſhip, per ſquare in London	0	8	0
With Fir ditto, per ſquare	0	6	0
Ditto with purlines and collar-beams of Oak, workmanſhip, per ſquare	0	12	0
Ditto of Fir, per ſquare	0	10	6
Timber of Oak, cut to ſcantlings, cube per foot	0	3	0
Ditto, framed in naked floors, &c. work included, per foot cube	0	3	6
Ditto, in door-caſes and windows, &c. plain'd and fram'd, per foot cube	0	4	0
Fir, framed in naked floors, roofing, cieling, quarter'd partitions, &c. per foot cube	0	2	4
Lintels of Fir, framed; bond timbers, &c. per foot cube	0	1	10
Ditto, plain'd and fram'd, in door-caſes and windows, &c. per foot cube	0	2	8
Barns and ſtables, per ſquare, framing, workmanſhip only, from 3s. 6d. to	0	5	0
Where hewing and ſawing the timber is included, according to the roughneſs and ſcantling of the timber, from 8s. per ſquare, to	0	9	6
Whole Deal, bridg'd guttering, for every ſuperficial foot	0	0	8
Centering vaults, per ſquare	0	11	0
Groin centering, per ditto	1	2	0

Center

	£.	s.	d.
Centuring to apertures, per foot ſquare	0	0	4
Bracketting to common plaiſter'd cornices, ditto —— —	0	0	4
Ditto to modillions, per foot ſquare	0	0	5
Cove bracketting of oak, at per foot ſuperficial ——	0	0	7
Ditto of Fir, per foot ——	0	0	5
Guttering and bearers of Oak, ditto ſuperficial — ——	0	0	9
Ditto of Fir, per foot —	0	0	6
Extra work in truſſing of beams, Oak, per foot running - -	0	0	10
Ditto Fir, at per foot running -	0	0	6
Rough whole Deal boarded floors, clear of ſap, at per ſquare - -	1	15	0
Ditto workmanſhip only, per ſquare, not plain'd - -	0	3	0
Ditto liſted, and ſhot clear of ſap, at per ſquare - - -	1	17	0
Work only, per ſquare - -	0	3	6
Folding joint boarding, clear of ſap, at per ſquare - -	1	10	0
Workmanſhip only, at per ſquare	0	5	0
Common ſtrait joint boarding, clear of ſap, work only, per ſquare -	0	8	0
Second beſt boarding, per ſquare, dowl'd - - -	4	0	0
Workmanſhip, per ſquare -	0	12	0
Clean Deal boarding, dowl'd, per ſquare - - -	5	5	0
Workmanſhip, per ſquare -	0	12	0

	£.	s.	d.
Ditto of long boards, 15 feet and upwards, per ſquare - - -	6	0	0
Second beſt floors taken up, and relaid and plain'd over, at per ſquare	0	16	0
Boarding with rough ſplit Deal, per ſquare - - -	0	14	6
Workmanſhip, per ſquare - -	0	2	0
Barn floors to lay with two inch Oak plank, joiſts included, at per ſquare	3	12	0
Workmanſhip only, at per ſquare	0	5	6
Ditto hewing and ſawing included, according to the roughneſs of the timber, per ſquare, from 12s. to	0	14	0
Barn floors laid with two-inch double Deals, and with Oak joiſts included, per ſquare - - -	2	10	0
Workmanſhip only, per ſquare -	0	5	0
Ditto with three-inch Deals, per ſquare, wirh joiſts - -	2	18	0
Workmanſhip only for ditto, per ſquare - - -	0	5	0
Linings of walls, plugs, and nails included, at per yard ſquare -	0	2	0
Workmanſhip only, per yard -	0	0	10
Ditto groov'd, tongu'd and plain'd, at per foot ſingle - -	0	0	2½
Weather boarding, feather edg'd, nails included, at per yard ſquare	0	1	8
Workmanſhip only, per yard ſquare	0	0	4
Boards plain'd and bended, per ſquare	0	17	0
Workmanſhip only, per ſquare -	0	2	9

	£.	s.	d.
Deal weather boarding, rough feather edg'd, nails included, per ſquare	0	15	0
Workmanſhip only	0	1	2
Oak-board weather-boarding, per ſquare with nails	1	9	0
Workmanſhip only, per ſquare	0	1	7
Ditto hewing and ſawing included, according to the roughneſs of the timber, from 6s. to	0	7	6

A TABLE, ſhewing how many boards, at five ſeveral gauges, ten foot long, will compleat a ſquare.

inch gauge	boards	inches over
at 5	24	0
at 6	20	0
at 7	17	1
at 8	15	0
at 9	13	3

Whole deal boarding, &c. nail'd againſt ſtuds, plain'd on one ſide, at per yard ſquare	0	2	9
Workmanſhip only, per yard ſquare	0	0	9
Plain'd on both ſides, at per yard ſquare	0	3	0
Workmanſhip only, at per yard	0	1	0
Ditto groov'd, tongu'd, ledged, or batten'd, at per yard, ſingle meaſure	0	4	0

	£.	s.	d.
Workmanſhip only, per yard -	0	1	4
Whole and ſlit deal partitions, groov'd and plain'd on both ſides, per yard, ſingle meaſure	0	2	2
Workmanſhip only, per yard -	0	0	11
With two-inch ſtuff, plain'd on one ſide, per yard ſquare for ditto -	0	3	3
Workmanſhip only, per yard -	0	1	1
Ditto plain'd on both ſides, at per yard, ſingle meaſure - - - -	0	3	10
Workmanſhip only, at per yard -	0	1	5
Two-inch planks of Oak, liſted, and ſhot clear of ſap, at per foot ſquare	0	0	7
Ditto of Fir, per foot —	0	0	4
Ditto three-inch Oak plank, at per foot - - - -	0	0	9
Ditto of Fir, per foot - -	0	0	5
Ditto four-inch thick of Oak, per foot - - - -	0	1	0
Ditto of Fir, per foot - -	0	0	7
Aſhlering, or cieling floors with ſtuff, four by three, at per ſquare - -	0	17	0
Steps of common ſtairs, ſtrings and ſtring boards, and bearers included, of Oak, at per foot ſuperficial, on the rafter and tread - - - -	0	0	9
Ditto of Fir, per foot - - - - -	0	0	7
Beſt ſort ditto, per foot, running -	0	1	6
Second beſt boards of ditto, ſtrings, bearers, and plain brackets included, at per foot - - - - -	0	0	11

Ditto

	£.	s.	d.
Ditto with clean Deals and carved brackets, at per foot ſuperficial	0	1	8
Common joiſting and boarding to half paces, per foot ſuperficial	0	0	10
Beſt ſort of ditto, per foot ſuperficial	0	1	0
Rails and balluſters, two inches ſquare, per foot, run ——	0	2	6
Ditto turn'd, newel and capp'd, per foot run —— ——	0	2	8
Ditto turn'd, newel and capp'd, ſquare foot, ditto —— ——	0	3	0
Rails and balluſters, three inches ſquare, per foot run - - -	0	3	2
Ditto four inches ſquare, per foot running —— ——	0	4	0

Note, when circular or ramping, the price muſt be three times meaſure, which is the ſame thing; and this rule muſt alſo be obſerv'd, for all circular works in general.

Whole Deal doors, ledg'd, per foot ſuperficial, meaſured on one ſide	0	0	6
When plough'd, tongu'd, and ledg'd, per foot ſquare —— ——	0	0	8
Gates of whole Deal, lin'd with whole Deal, per foot ſuperficial	0	0	9
Whole Deal dreſſers, feet and bearers, per foot ſquare - -	0	0	8
Two-inch Deal dreſſers, with turn'd columns and bearers, per foot ſuperficial —— ——	0	1	2

	£.	s.	d.
Wainſcotting ſquare Deal, per yard ſuperficial	0	2	8
Quarter-round, &c. Deal wainſcotting, flat pannel, at per yard ſquare	0	3	6
Pannels rais'd, ſquare ditto, per yard	0	3	9
Strait mouldings, Deal, per foot ſuperficial	0	1	1
Pannels rais'd with a bead ditto, per yard	0	3	11
Deal modillion cornices, per foot ſquare	0	1	10
Ditto workmanſhip, per foot ſquare	0	0	11
Plain whole Deal cornices for outſide work, per foot	0	0	10
Dentile cornices, per foot ſuperficial, with Deal	0	1	6
Workmanſhip only, per foot	0	0	6
Saſhes of Deal, inch and half thick, at per foot ſquare	0	0	6
Ditto with Deal-cas'd frames, Oak-ſoils, pulley-pieces, and Oak-ſoils, per foot ſuperficial	0	1	0
One inch and an half of right wainſcot ſaſhes, complete, at per foot ſquare	0	0	7½
Ditto with Deal-cas'd frames, wainſcot pulley-pieces, and Oak ſoils, per foot ſuperficial	0	1	3
Ditto with right wainſcot frames, per foot ſquare	0	1	5
Two-inch right wainſcot ſaſhes, all complete, at per foot ſquare	0	1	0

Ditto

	£.	s.	d.
Ditto with Deal-cas'd frames, wainſcot pulley-pieces, and Oak ſoils, per foot ſuperficial —	0	1	6
Ditto with right wainſcot frames, ditto, ſuperficial - -	0	2	2
Girt and Lutheran windows made of Oak, the ſtuff, three by four, per foot ſuperficial — —	0	0	7
Ditto of Fir, per foot — —	0	0	4½
Workmanſhip only, from 1d. ½ per foot, to - - -	0	0	2

PALLISADING.

Palliſading poſts about ſix inches ſquare, and upper rails about three and an half by four; the lower rails, ſix by three; pales, three by one, and the length of the pales, about four feet and an half; the poſts to ſtand about ſix foot above ground, ſo as to admit of about 18 inches of under pinning under the lower rail, the ſtuff to be all Oak; Carpenters work and ſtuff only, per foot lineal -	0	2	9
The pales of Fir, per foot for ditto	0	2	4
Workmanſhip only, per foot running for ditto - - -	0	1	0
Ditto with inch and half ſquare pales, Oak per foot - -	0	3	0
The pales of Fir, per foot for ditto	0	2	6

Ditto

	£.	s.	d.
Workmanſhip only, per foot running, from 16d. to - - -	0	1	6

Of the proper Scantlings for the cutting of Timber, according to Directions laid down by ſeveral eminent Workmen of the greateſt Experience.

Of PRINCIPAL POSTS *for* SMALL BUILDINGS.

Poſts of Fir 8 feet in height, and 4 inches ſquare
Ditto 10 feet ditto, and 5 inches ditto
Ditto 12 feet ditto, and 6 inches ditto
Poſts of Oak 10 feet in height, and 6 inches ſquare
Ditto 12 feet ditto, and 8 inches ſquare
Ditto 14 feet ditto, and 10 inches ſquare

For LARGE BUILDINGS.

Poſts of Fir 8 feet in height, and 5 inches ſquare
Ditto 12 feet ditto, and 8 inches ſquare
Ditto 16 feet ditto, and 10 inches ſquare
Oak poſts 8 feet in height, and 5 inches ſquare
Ditto 12 feet ditto, and 12 inches ſquare
Ditto 16 feet ditto, and 16 inches ſquare

The SCANTLING *of* GIRDERS.

If the length of a Fir girder be 10 feet, its ſcantling muſt be 8 inches by 10

If 12 ditto, its ſcantling muſt be 8 ½ inches by 10

If 14 ditto, its ſcantling muſt be 9 inches by 10 ½

If 16 ditto, its ſcantling muſt be 10 inches by 11

If 18 ditto, its ſcantling muſt be 11 inches by 12

If 20 ditto, its ſcantling muſt be 11 ½ inches by 13

If 22 ditto, its ſcantling muſt be 12 inches by 14

If a girder of Fir in a ſmall building be 16 feet in length, its ſcantling muſt be 8 inches by 11

If 20 ditto, its ſcantling muſt be 8 inches by 11

If 20 ditto, its ſcantling muſt be 10 inches by 12 ½

If 24 ditto, its ſcantling muſt be 12 inches by 14

But if of Oak, then the ſcantling muſt be 10 inches by 13, 12 inches by 14, and 14 inches by 15

In LARGE BUILDINGS.

If a fir girder be in length 16 feet, its ſcantling muſt be 9 ½ inches by 13

If

If 20 ditto, its ſcantling muſt be 12 inches by 14
If 24 ditto, its ſcantling muſt be 13 ½ inches by 15
If a girder of Oak in length be 16 feet, its ſcantling muſt be 12 inches by 14
If 20 ditto, its ſcantling muſt be 15 inches by 15
If 24 ditto, its ſcantling muſt be 18 inches by 16

The SCANTLING *of common and trimming Joiſts:*

Trimming joiſts in length being 5 feet, its ſcantling muſt be 7 inches by 3
If 6 ditto, its ſcantling muſt be 7 inches by 4
If 7 ditto, its ſcantling muſt be 7 inches by 5
If 8 ditto, its ſcantling muſt be 8 inches by 4
If 9 ditto, its ſcantling muſt be 8 inches by 5
If 10 ditto, its ſcantling muſt be 9 inches by 6
Common joiſts, being in length 5 feet, its ſcantling muſt be 7 inches by 2 ½
If 6 ditto, its ſcantling muſt be 7 inches by 2 ½
If 7 ditto, its ſcantling muſt be 7 inches by 2 ¾
If 8 ditto, its ſcantling muſt be 8 inches by 3
If 10 ditto, its ſcantling muſt be 8 inches by 3 ¼
If 11 ditto, its ſcantling muſt be 8 inches by 3 ½
If 12 ditto, its ſcantling muſt be 9 inches by 4

The SCANTLING *of* JOISTS *for* SMALL BUILDINGS.

Fir joiſts, 6 feet long, muſt be 5 inches by 2 ½
Ditto, 9 ditto, muſt be 6 ½ inches by 2 ½
Ditto, 12 ditto, muſt be 8 inches by 2 ½

Oak

Ditto Oak, 6 feet long, muſt be 5 inches by 3
Ditto, 9 ditto, muſt be 7 ½ inches by 3
Ditto, 12 ditto, muſt be 10 inches by 3.

For LARGE BUILDINGS.

Fir joiſts, 6 feet long, muſt be 5 inches by 3
Ditto, 9 ditto, muſt be 7 ½ inches by 3
Ditto, 12 ditto, muſt be 10 inches by 3
Oak ditto, 6 ditto, muſt be 6 inches by 3
Ditto, 9 ditto, muſt be 9 inches by 3
Ditto, 12 ditto, muſt be 12 inches by 3.

Of bridging JOISTS *in* SMALL BUILDINGS.

Bridging joiſts of Fir, whoſe bearing is 6 feet,
muſt have a ſcantling of 4 feet by 2 ½
Ditto of Oak, ditto, 4 feet by 3
Fir, 8 foot, muſt have ditto, 5 feet ½ by 2 ¼
Ditto of Oak, ditto, 5 feet ½ by 3
Fir, 10 foot, muſt have ditto, 6 feet by 3
Ditto of Oak, ditto, 7 feet by 3.

Of bridging JOISTS *in* LARGE BUILDINGS.

Fir-bridging joiſts, whoſe bearings are 6 feet,
muſt have a ſcantling of 4 inches by 3
Ditto of Oak, ditto, 5 inches by 3 ½
Fir, 8 foot, muſt have ditto, 5 ½ inches by 3
Ditto of Oak, ditto, 6 ½ inches by 3 ½
Fir, 10 foot, muſt have ditto, 7 inches by 3
Ditto of Oak, ditto, 8 inches by 3 ½

SCANTLINGS *for* BEAMS.

If the bearing of the beam in the clear, be 12 feet, its ſcantling muſt be 6 ¼ inches by 8

If 16 ditto, ditto 6 ½ inches by 8 ½
If 20 ditto, ditto 6 inches by 9
If 24 ditto, ditto 7 inches by 9
If 28 ditto, ditto 7 ½ inches by 9 ½
If 32 ditto, ditto 8 inches by 10
If 36 ditto, ditto 8 ½ inches by 10 ½
If 40 ditto, ditto 8 ½ by 11

The proper SCANTLINGS *for* BEAMS *and* RAFTERS, *are as follow*, viz.

Firſt, for Beams or Ties for SMALL BUILDINGS.

If the length of a beam of Fir be 30 feet, its ſcantling muſt be 6 inches by 7
Ditto of Oak, ditto, 7 inches by 8
Fir, 45 feet, its ſcantling muſt be 9 inches by 8 ½
Ditto of Oak, ditto, 10 inches by 11 ½
Fir, 60 feet, its ſcantling muſt be 12 inches by 11
Ditto of Oak, ditto, 13 inches by 15

For LARGE BUILDINGS.

If the length of a beam of Fir be 30 feet, its ſcantling muſt be 7 inches by 8
Ditto of Oak, ditto, 8 inches by 8
If 45 feet, its ſcantling muſt be 10 inches by 11 ½
Ditto of Oak, ditto, 11 inches by 11 ½
If 60 feet, its ſcantling muſt be 13 inches by 15
Ditto of Oak, ditto, 14 inches by 15.

For

For PRINCIPAL RAFTERS *in* SMALL BUILDINGS.

If a rafter of Fir be in length 24 feet, its ſcantling at top muſt be 5 inches by 6, and at bottom, 6 inches by 7

If 36 feet at top, 6 ½ inches by 8, ditto at bottom, 8 inches by 10

If 48 feet at top, 8 inches by 10, at bottom, 10 inches by 12

But if at top, of Oak ditto

7 inches by 8, and at bottom, 8 inches by 9
8 inches by 9, ditto 9 ditto by 10 ½
9 inches by 10, ditto 10 ditto by 12

For LARGE BUILDINGS.

If the rafter be of Fir, and its length 24 feet, its ſcantling at top muſt be 7 inches by 8
and at bottom, 8 inches by 9
If 36 feet at top, 8 inches by 9
at bottom, 9 inches by 10 ½
If 48 feet at top, 9 inches by 10
at bottom, 10 inches by 12
But if of Oak at top, 8 inches by 9
at bottom, 9 inches by 10
at top, 9 inches by 10
at bottom, 10 inches by 12
at top, 10 inches by 12
at bottom, 12 inches by 14

For SMALL RAFTERS *in* SMALL BUILDINGS.

If the rafter be of Fir, and its bearing be 8 feet, its ſcantling muſt be 3 ½ inches by 2 ½

If 10 feet, ditto,	4 ½ inches by 2 ½
If 12 feet, ditto,	5 ½ inches by 2 ½
But if of Oak,	4 ½ inches by 3
	5 ½ inches by 3
	6 ½ inches by 3

For LARGE BUILDINGS.

If the rafter be of Fir, and its bearing be 8 feet, its ſcantling muſt be 4 ½ inches by 3

If 10 feet, ditto,	5 ½ inches by 3
If 12 feet, ditto,	6 ½ inches by 3
But if of Oak,	5 ½ inches by 3
	7 inches by 3
	9 inches by 3

PURLOINS.

Scantlings for Purloins muſt be cut from 9 inches by 8, to 9 inches by 12, in large buildings, where they are framed into the principal rafters; but for common ſmall buildings, where they are laid into the collar-beams, from 4 inches by 5, to 5 inches by 6.

SCANTLINGS for CELLS and OVER-WAYS, are cut from 8 inches by 9, to 9 inches by 6.

RAISING-PLATES are cut to ſcantlings, from 8 inches by 5, to 9 inches by 6.

Note, In reſpect to laying down the price or value of a ſquare of framing, I ſhall not here preſume, being a taſk too difficult to perform, unleſs

unleſs buildings were all of one ſize, and of the ſame length, breadth, and height; then, indeed, it would be very eaſy to lay down a rule that would hold good in general: But whereas, the various forms and magnitudes of buildings, require different ſcantlings of timber, conſequently the value thereof muſt be more or leſs accordingly. The beſt method that I can here recommend for this purpoſe, is, firſt of all, to draw a plan of the whole deſign, from which to draw every particular part, in reſpect to the form and faſhion thereof, from which you may make an eſtimate of what timber will be required, according to the dimenſions of each particular part; from which you may then calculate the value thereof, according to the ſeveral contents, in ſquare feet, yards, &c.

The following prices of the ſeveral kinds of Carpenters and Joiners work, viz. (labour only) are warranted original, having never before appear'd in public, conſequently not to be met with elſewhere, in any publication whatſoever; in reſpect to which, numbers of workmen have hitherto been entirely unacquainted with, therefore will now (being made public) undoubtedly prove beneficial to them in general.

Of FLOORING.

	£.	s.	d.
Folding flooring, at per ſquare -	0	5	0
Strait joint ditto, at per ſquare -	0	8	6

Dowell'd

	£.	s.	d.
Dowell'd flooring, with boards, per ſquare	0	14	0
Dowell'd ditto, with battins	0	16	0
Cas'd frames, with Oak cills, and inch and half Deal ſaſhes, hung, per foot ſuperficial	0	0	5
Inch and half wainſcot ſaſhes, ditto	0	0	5½
Ditto for double hanging, at per foot ſuperficial	0	0	6
If cas'd frames, with wainſcot pulley-pieces, and inch and half wainſcot ſaſhes, ſingle, at per foot ſuperficial	0	0	6
If inch and half ſaſhes of wainſcot, hung, at per foot ſuperficial	0	0	3
Deal ditto, fixt, at per foot ſuperficial	0	0	2½
Common ſteps, and riſers to ſtairs, and carriages to ditto, at per foot ſuperficial	0	0	2½
Ditto glued, with moulded noſings, ditto run	0	0	4½
Run of circular riſer to curtail ſtep, ditto	0	1	10
Run of ſquare hand-rail and baliſter, at per foot	0	0	7
Run of common-moulded hand-rail balliſter and ſtring, at per foot	0	0	11
Run of ſtrait-moulded baliſter, architrave and ſtring-board, at per foot	0	1	0
Run with rampt and need rail, per foot	0	1	10

Run

	£.	s.	d.
Run with rampt and twiſt-rail, at per foot —— ——	0	3	6
Cut brackets, with noſings, at per foot	0	0	7

Note, It is uſual, ſometimes, to take theſe ſort of ſtairs by the great.

Common dog-leg ſtairs, at per ſtory	1	0	0
If brackets —— at ditto	1	5	0
With ramp and need rails, with a twiſt and cut bracket, clean ſteps and riſers, turn'd baniſters and carriages fixt, at per ſtory —	4	0	0
Kitchen and garret to ditto, per ſtory	1	0	0
Square wainſcot, at per yard, ſuperficial — —	0	0	10
Square dwarf ditto, at per yard ditto	0	1	0
Two-inch ſquare wainſcot partitions, ditto — —	0	1	9
Inch and half ditto, ditto, per yard	0	1	6
Square ſhutters, with two pannels, at per foot ſuperficial ——	0	0	3½
Inch clamp ditto, at per foot ſuperficial —— —	0	0	2½
Square ſaffets backs and elbow, ditto	0	0	3
Two pannel ſquare doors, at per foot	0	0	2
Four-pannel ditto, at per foot	0	0	2¼
Ovalo flat pannel ditto, at per yard	0	1	4
Dado dove-tail'd on the back, per yard —— —	0	1	6

	£.	s.	d.
Inch and half ovelo ſix-pannel doors, ſquare back, flat pannel'd, at per foot ſuperficial - -	0	0	4
Two-inch ditto, ditto, at per foot	0	0	4½
Ditto ſtuck on the back, per foot	0	0	5½
Raking dado, at per yard ſuperficial	0	1	9
Bead and fluſh ſix-pannel'd two-inch doors, at per foot ſuperficial -	0	0	6
Bead and butt, at per foot ſuperficial	0	0	4
Mouldings for baſe and impoſt, and double architraves, at per foot ſuperficial - - -	0	0	4½
Chimney mouldings, at per foot ſuperficial - - -	0	0	7½
Levil ſcirting, at per foot ſuperficial	0	0	1¼
Raking ditto, at per foot ſuperficial	0	0	1¾
Levil torus ſcirting, at per foot ſuper.	0	0	2
Raking ditto, at per foot ſuperficial	0	0	2¾
Dreſſer boards, at per foot ſuperficial	0	0	2½
Whole deal ſunk ſhelves, ditto -	0	0	2½
Back linings to windows, at per ditto	0	0	1¼
Framed grounds, and rabbeted joints, at per foot ſuperficial - -	0	0	2½
Ovalo three-pannel'd ſhutters, at per foot ſuperficial - - -	0	0	5½
Run of O G's, at per foot	0	0	0¾
Of bracketting to plaſter cornice, ditto - - - -	0	0	1½
Run of ſingle architrave, at per foot	0	0	2
Single cornice and facio, at per foot, run - - - -	0	0	2

Common

	£.	s.	d.
Common three-barr fret, at per foot, run - - - -	0	0	3
Five-barr ditto, at per foot, run	0	0	4½

CHAP. III.

Of PLAISTERERS WORK.

PLAISTERERS commonly work by the yard ſquare; and their work is principally of two kinds, namely, 1ſt. Works lathed or plaſtered, which they call Cieling; 2d. Works rendered, which are of two kinds, viz. upon brick walls, or between quarters, in the partitions between rooms; all which are meaſured by the yard ſquare, or ſquare of 3 feet, which is 9 feet.

The prices of which, according to the nature and quality of the work, you have here following at large, viz.

	£.	s.	d.
Grey plaſter floors, two inches and an half thick, per ſquare - -	2	7	6
Workmanſhip only, per ſquare - -	1	2	6
Red plaſter floors, per ſquare ditto -	3	7	6
Workmanſhip only, per ſquare ditto	1	6	6
Stoco on Fir laths, per yard ſquare — — — —	0	2	0
Ditto workmanſhip only, per yard	0	0	10
Stoco on Oak laths, per yard - -	0	2	1
Ditto workmanſhip only, per yard	0	0	10
Stoco on brick walls, per yard - -	0	1	8

	£.	s.	d.
Ditto workmanſhip only, per yard	0	0	10
Floated cielings, per yard ſquare - -	0	1	0
Workmanſhip only, per yard - -	0	0	5
Common cielings, not floated, per yard ——— ———	0	0	8½
Workmanſhip only, per yard ditto	0	0	3½
Floated rendering, per yard - -	0	0	6
Workmanſhip only, per yard ditto	0	0	2½
Common rendering, per yard - -	0	0	4½
Workmanſhip only, per yard ditto	0	0	1½
Rendering on groins, per yard —	0	0	6
Workmanſhip only, per yard ditto	0	0	2½
Lime-white, and whitening of old work, per yard — —	0	0	2½
Workmanſhip only, per yard - - -	0	0	0½
Whitening new work, per yard - -	0	0	1
Workmanſhip only, per yard - - -	0	0	0¼
Inrich'd mouldings to pannels in cielings, &c. per foot running --	0	1	10
Plain mouldings to corniſhes, &c. per foot - - - -	0	0	9
Corinthian corniſhes, fully inrich'd, per foot - - - -	0	2	0
Ionic ditto, per foot - - - - -	0	1	7
Plain ditto, per foot - - - - -	0	1	2
Inrich'd friezes, with Oak leaves, acorns, &c. per foot - - -	0	1	10
Large frames on ſtair-caſes, &c. fully inrich'd, per foot - - - -	0	2	0
Large feſtoons of fruit and flowers, &c. per foot - - - - -		4	0

Note,

Note, In the laſt eight articles, viz. the ornaments, you may, in reſpect to the materials, allow two-pence per foot, it being all of fine ſtuff.

CHAP. IV.

Of CARVERS WORK.

IN reſpect to the prices in general, relating to Carvers Work, it is almoſt impoſſible here to be particular, by reaſon of the great uncertainty thereof, being for the moſt part proportioned according to the richneſs of the work, the nature and quality of materials they work upon, &c. therefore, ſhall only think neceſſary to give the following eſtimate thereof, which, in common, are ſuch, as will be found the leaſt ſubject to variation, viz.

	£.	s.	d.
Ovolo to Deal framing, carv'd, with eggs, per foot running - - -	0	0	10
O G to Deal framing, carv'd, with ſeven-leav'd graſs, per foot running	0	0	9
Ovolo to framing in right wainſcot, carv'd, with eggs, per foot running —— —— ——	0	1	2
Small O G to the raiſing of pannels in Deal, carv'd, with three-leav'd graſs, per foot —— ——	0	0	4

	£.	s.	d.
Carving the Ionic capitals, per foot facio	0	6	10
Ditto the Corinthian and Compoſite capitals, at per foot facio, work about	0	9	8

CHAP. V.

Of PAINTERS WORK.

IN taking the dimenſions of Painters Work, it is the ſame as that of Joiners, by girting over the mouldings and ſwelling pannels, in taking the height (and it is but reaſon they ſhould be paid for that on which their time and colour are both expended): The dimenſions thus taken, the caſting up, and reducing feet into yards, is altogether the ſame as in Joiners work. Tables ready calculated for ſhewing, by inſpection, the meaſurement of all ſuch work you have in the ſecond part hereof, to any dimenſion whatſoever, either in feet and inches, or ſquare yards, &c. as may be required. The Painter uſually reckons his work, once, twice, or thrice colour'd over; and in reſpect to the window-lights, window-bars, caſements, and ſuch like things, they do by the piece.

The following is an eſtimate of their ſeveral prices, according to the manner of the work:

Inſide

	£.	s.	d.
Inſide and outſide painting, three or four times in oil, per yard, from 6 d. to	0	0	8
Painting ſecond colour, and finiſhing, per yard	0	0	5
Clear coaled and finiſhed, per yard	0	0	4
Saſh frames, three times in oil each	0	1	0
Saſh ſquares, at per each	0	0	1
Window-lights, three times in oil each	0	0	3
Caſements each	0	0	3
Painting with olive-colour, at per yard	0	0	8
With Pruſſian blue, at per yard	0	0	10
With greens, at per yard	0	1	0
Modillion corniſhes, from 6 d. per foot running, to	0	1	0
Common outſide corniſhes, if ſingle, per foot running	0	0	2

The prices of colours, as ſold at the Colour-ſhops in London; *and how many ſquare yards each colour will paint.*

Firſt primer, ground in oil, at per 112 lb. weight	1	16	6
Ditto, at per pound	0	0	4

One pound of which, will paint with oil, near 20 yards ſquare

Second primer, ground in oil, at per 112 lb. weight	1	16	6

Ditto

	£.	s.	d.
Ditto, at per pound - - - - -	0	0	4

One pound of which will paint near 12 yards ſquare

Beſt white lead ground in oil, at per 112 lb. weight - - - - - -	1	16	6
Ditto, at per lb. - - - - - - -	0	0	4

One pound of which, with oil, will paint 7 or 8 ſquare yards

Pearl colour, Lead, Cream, Stone, Wainſcot or Oak, ditto — at 4d. and 5d. per lb. ground in oil — One pound of which, with oil, will paint near 8 ſquare yards

Chocolate, Mahogany, Cedar, Walnut-tree — Colours ground in oil, at 6d. per lb. — One pound of which, with oil, will paint near 10 ſquare yards

Gold, olive, pea, fine ſky blue (mix'd with Pruſſian blue), orange, lemon, ſtraw, pink and bloſſom colours, ground in oil, from 8 d. to 12 d. per pound; one pound of which, with oil, will paint near 8 ſquare yards.

Fine deep green, ground in oil, at 2 s. 8 d. per lb. which, with oil, will paint 20 ſquare yards

Linſeed oil, from 10 d. to 12 d. per quart

Turpentine oil, at 12 d. per quart

Beſt drying oil, at 12 d. per quart

Putty, at 3 d. ½ and 4 d. per pound

Double Size, uſed by Painters for painting new work, at 4 s. 6 d. and 5 s. per firkin, or 2 d. per quart

Single Size, at 18 d. per firkin, or 1 d. per quart.

CHAP.

CHAP. VI.

Of PAVIOURS WORK.

	£.	s.	d.
FLanders brick paving, new, per yard ſquare	0	3	9
Workmanſhip only, per yard	0	0	6
New Purbeck ſquare paving, at per foot	0	0	10
Workmanſhip only, gravel included, per foot	0	0	1½
Paving with rag, per yard	0	2	0
Old work, per yard ditto	0	0	10
New pebble paving, 14 inches deep, per yard	0	3	10
New rag paving, or bowlers, per yard	0	2	10
Red brick paving, per yard	0	1	6
Workmanſhip for ditto only, per yard	0	0	5
Paving with clinkers, per yard	0	2	7
White marble, vein'd with red, &c. in ſquares, per foot	0	5	6
Portland ſtone paving, fit for halls, per foot	0	1	7
Paving with nine-inch pamments, per yard	0	2	8
Workmanſhip only per yard for ditto	0	0	6

Rates

Rates of materials, according to the prices in the preceding page.

Pebbles, at 20 s. per ton
Gravel, at 3 s. 6 d. per load
Rags, at 12 s. per ton
Flanders bricks, at 20 s. per thouſand;

ſo that, according as thoſe vary in their rates, an allowance in the prices muſt be conſidered.

CHAP. VII.

Of MASON'S WORK.

MASONS meaſure their work ſometimes by the foot ſolid, ſometimes by the foot ſuperficial; and in ſome places, they meaſure their walling by the rood, of 21 feet long and 3 feet wide, which is 63 ſquare feet; prices of which, according to their workmanſhip and quality of the materials, are as follows, viz.

	£.	s.	d.
Italian marble, black and white vein'd, per foot cube	1	2	0
Plain work on ditto, per foot ſuperficial	0	3	3
Moulded work on ditto, per foot ſuperficial	0	5	6
Slabs of ditto in chimney-pieces, at per foot ſquare	0	5	3

Purple

	£.	s.	d.
Purple marble in ſlabs, at per foot ſquare	0	8	2
Dove marble, at per foot ſuperficial	0	6	4
Portland ſtone, meaſur'd when wrought, per foot cubical meaſure	0	2	6
Portland ſtone, ſtreight, plain-work, per foot ſuperficial	0	1	0
Circular ditto, plain, per foot ſuperficial	0	1	4
Streight-moulded work ditto, per foot ſuperficial	0	1	2
Circular-moulded work ditto, per foot ſuperficial	0	1	5
Bath ſtone, meaſur'd when wrought in London, at per foot cube	0	1	9
Streight plain-work ditto, per foot ſuperficial	0	0	6
Circular plain-work ditto, per foot ſuperficial	0	0	8
Streight-moulded work ditto, per foot ſquare	0	0	7
Circular-moulded work ditto, per foot ditto	0	0	9
Portland ſtone chimney-pieces, inch and half thick, per foot ſuperficial	0	1	6
If 2 inches thick, per foot	0	1	9
Rygate fire-ſtone, hearth and covings, per foot ſuperficial	0	1	4
Portland paving inch and half thick, per foot ſuperficial	0	1	6
Ditto with black marble dots, per foot ſuperficial	0	1	10

	£.	s.	d.
Paving with Purbeck, in random courſes, per foot — —	0	0	8
Streight courſes, per foot ditto —	0	0	10
Paving with old Purbeck, ſquar'd and laid, per foot - - - - -	0	0	5
Black and white marble ſquares, per foot ſuperficial - - - - - -	0	3	0
White and vein'd marble ſlab in chimney-pieces, per foot ſuperficial — — — —	0	5	0
Ditto ſtatuary marble ſlab, per foot	0	7	0
Black and yellow marble ſlab in ditto, per foot ſquare — —	0	8	0
Common purple in ditto, per foot ſuperficial — —	0	6	6
Aſtragal ſteps of Portland, per foot, running meaſure — —	0	3	8
Ditto plain, at per foot running - -	0	3	0
Purbeck ſteps, at per foot running -	0	2	4
Portland copeing, about 1 foot wide; 3 inches one ſide, and 1½ the other in thickneſs, per foot running —	0	1	6
But when larger, to be cubed firſt, and then meaſured, ſuperficial plain work; ſo alſo Portland curbs for iron-work, &c. muſt be cubed firſt, and then meaſured, ſuperficial plain work			
Alſo the holes cut in the ſame for iron, at per hole - - - - -	0	0	2
Baſes of columns, architraves, frizes, corniſhes, &c. of marble, are, for workmanſhip, per foot ſuperficial	0	6	6

	£.	s.	d.
The ſhafts of columns and plaſters, fluting on Portland ſtone, (work only) per foot facio work - -	0	2	6
Corinthian capital carvings, or for Compoſite orders, at per foot facio work, (excluſive of the ſtone) from 6s. to - - - -	0	8	0

CHAP. VIII.

Of PLUMBERS WORK.

	£.	s.	d.
LEAD in ſheets, for flat gutters, &c. carriage included, per cwt. at - - - - - -	0	18	0
Ditto with work, nails and wall-hooks included - - - -	0	19	6
Sheet lead in flats, gutters, &c. ſolder and labour included, at per cwt.	0	1	2

Note, Whereas Plumbers uſually caſt their ſheet lead of various thickneſſes, for guttering, covering of roofs, &c. viz. from 7 to 12 pound the foot ſquare; ſhall therefore inſert the following table, which will readily ſhew the value of a foot ſquare of ſheet lead, when caſt to any of the abovementioned thickneſſes, by which it will be eaſy to calculate the expence of covering any place with ſheet lead, of any thickneſs, by only meaſuring the ſuperficies of

the place intended to be covered with such a lead, at 7lb. to a foot, at 18d. per cwt. is worth

	£.	s.	d.				£.	s.	d.
	0	1	1½	per foot at	20 s.	per cwt.	0	1	3
At 8 lb. ditto	0	1	3¼	ditto	at ditto	ditto	0	1	0
9 lb. ditto	0	1	5¼	ditto	at ditto	ditto	0	1	7½
10 lb. ditto	0	1	7¼	ditto	at ditto	ditto	0	1	9¼
11 lb. ditto	0	1	9	ditto	at ditto	ditto	0	1	11½
12 lb. ditto	0	1	11	ditto	at ditto	ditto	0	2	1½

	£.	s.	d.
Old lead, cast and laid, per hundred	0	3	6
For casting of old lead, and the Plumber to return the same weight, per hundred - - - -	0	4	6
To exchange old lead for sheets, per hundred, from 3 s. to - - -	0	4	0
Leaden cisterns, cast with ornaments, solder and all included, at per cwt. from 1 l. 1 s. to - - - -	1	4	0
All water-pipes, from 3-4ths of an inch to 7 inches bore, labour and solder included, per hundred —	1	3	0
Rain water pipes and lead pumps, at ditto ——— — ----	1	2	6

A Table of the weight of leaden pipes, according to their size.

Pipes of	¾	inches bore,	weighs 10 lb.	per yard
	1	ditto	ditto 12	ditto
	1¼	ditto	ditto 16	ditto
	1½	ditto	ditto 18	ditto
	1¾	ditto	ditto 21	ditto
	2	ditto	ditto 24	ditto

A Table

A Table of the weight and prices of leaden pipes, of different sizes; where lead, casting, and all is reckon'd, at 22s. per hundred.

To a pipe of 3 inches bore, there is allowed

	45 lb.	weight,	worth from	9s. to 10s per yard
To ditto 2 ¾ inches	40 lb.	ditto	ditto	8s to 9s ditto
To ditto 2 ½ ditto	36 lb.	ditto	ditto	7s to 8s ditto
To ditto 2 ditto	30 lb.	ditto	ditto	6s ditto

	£.	s.	d.
Sash weights, and other things of the like, per cwt.	0	18	0
Solder, at per pound	0	0	8½
The customary allowance for old lead, per cwt. is	0	14	0
Stop cocks, at per pound	0	1	4
Setting on, solder, and work for ditto	0	1	2
If an inch and an half diameter, at per cock	0	9	0
Ditto 1 ¼ inch diameter, at per cock	0	7	6
Ditto 3 ¼ ditto ditto	0	0	6
Ditto ½ ditto ditto	0	0	4

Ball Cocks

The ball 6 inches diameter, and the cock 1 inch, at per cock	0	13	0
Ditto 5 ¾ inches ditto	0	10	0
Ditto 4 ½ inches ditto	0	6	6

Brass Cocks and Bosses

From 3 inches, to 1 ¼ inch diameter, at per lb.	0	1	6
Ditto with solder, setting on, and work included, if 1 ½ inch diameter, at per cock	0	7	6

Ditto

		£.	s.	d.
Ditto inch and ¼, at per cock	- -	0	6	0
Ditto inch	ditto - -	0	5	0
Ditto ¾	ditto - -	0	4	0
Ditto ½	ditto - -	0	3	6

CHAP. IX.

Of GLAZIERS WORK.

GLAZIERS meaſure their work by the foot ſquare, ſo that the length and breadth of a pane of glaſs in feet, being multiplied into each other, produceth the content; and here it may be neceſſary to obſerve, that they uſually take their dimenſions to a quarter of an inch; and in multiplying feet, inches, and parts, the inch is divided into 12 parts as the foot is, and each part ſubdivided into 12, &c.

EXAMPLE.

Suppoſe a window having 8 panes of glaſs, and the depth of each pane to contain 10 inches and 6 parts, the length of all the panes added together, make 8 feet 6 inches, how many feet of glazing are therein contained?

As the extent of theſe tables only reach to five feet ſquare, you cannot have the whole length, therefore find the half thereof, viz. 4 feet 3 inches;

inches; which being done, look for your depth, viz. 10 inches and 6 parts; and oppoſite thereto, in the column of meeting, you will find

f.	i.	p.
3	8	7
3	8	7

which being doubled, make 7 5 2 the content of that window.

The proof

	f.	i.	p.	f.	f.
Length	8	6	0		
Breadth	0	10	6		
	0	4	3	0	0
	7	1	0	0	
Feet	7	5	3	0	0

Of the Quality of Glaſs.

The glaſs which we uſe here in England, is that which is made at Newcaſtle and Woolidge. The ſize of thoſe tables into which they make them, do contain about 5 foot; 45 of theſe tables do account for a caſe; the price of which is rather uncertain; for when coals are plenty, glaſs is cheap; and when there is a ſcarcity of coals in London, then glaſs is obſerved to be dearer; and notwithſtanding coals are ſeldom ſcarce at Newcaſtle, yet, as they have no other conveyance ſo convenient for their glaſs to London, than by the coal ſhips, it is oftentimes dearer on that account, than otherwiſe it would be;

be; ſometimes at 30s. and at other times at 40s. the caſe; therefore if glaſs be worth ſo much whole, it muſt needs be ſtill dearer when cut into ſquares or quarries.

Of the cutting of Glaſs.

To cut a caſe of glaſs into quarries, diamond faſhion, (with halves, quarters, and three quarters of quarries, as the glaſs falls out) it is worth about 6s. 6d. or 7s. and this form improves the glaſs beſt, for that there is very little loſs.

Of theſe quarries, there are different forms; ſome larger, ſome ſmaller; but the moſt general ſize, is 6 inches from angle to angle, one way, and 4 inches the other; and every quarry of this ſize, contain 12 inches; and conſequently there ſhould be 12 quarries in a foot, but between 10 and 11 (counting halves and quarters) do uſually make a foot, the lead ſupplying the remainder; and a foot of this glaſs being banded and ſet up, 5d. and 6d. a foot is a uſual rate; but in meaſuring, caſements muſt be meaſured to the length and breadth of the iron; and oval windows (if any) muſt be meaſured as if they were ſquare windows, of ſuch a length and breadth, for that there is more trouble in them than in plain work. There is another ſort of glaſs uſed here in England, which is called Normandy glaſs; of this glaſs, 25 tables make a caſe; it is thinner, clearer, and more tranſparent than the other, and is much dearer, and is commonly cut into long ſquares; the ſeveral prices of which, according

cording as buildings in general require, you have in the following eſtimates at large, viz.

Firſt, Of Crown Glaſs.

	£.	s.	d.
Crown glaſs in ſaſhes, meaſured neat, per foot	0	1	0
The middle bars included, per foot ditto	0	0	11
Saſhes glaz'd with crown glaſs, put-tied on both ſides, per foot	0	1	1
Crown glaſs glazing leaded, per foot	0	0	4
Newcaſtle glaſs in ſaſhes, per foot ſuperficial, from 6d. to	0	0	8
Ditto in lead, ſuperficial	0	0	5
Saſhes glaz'd with waved or jealous glaſs, per foot	0	2	8
With plate glaſs, diamond cut, from one to two foot, at per foot	0	5	3
From two to three foot panes, at per foot	0	5	6
From three to four foot panes, at ditto	0	6	3
For glazing with ſquare-work, ſolder and lead only, per foot	0	0	3
Workmanſhip only, per foot	0	0	1½
To glaze with quarries, the workman finding only lead, ſolder, and work, at per foot	0	0	3½
Ditto only workmanſhip, per foot, from 1½ to	0	0	3
For taking down of quarry glaſs, ſcowering, ſoldering, banding, and ſetting up, from 1½ per foot to	0	0	2

CHAP. X.

Of SMITHS WORK.

	£.	s.	d.
CHIMNEY bars, at per lb. from 3 d. to - - - - - - - - -	0	0	4
Common plain iron railing, per pound —— —— ——	0	0	3½
Ditto with pilaſters, per ditto - -	0	0	6
Croſs window bars, fil'd, and work of the like nature, per pound - -	0	0	5½
Iron doors and ſhutters, at per pound	0	1	0
Aſh grates and caſements, at ditto -	0	0	8
All hammer'd work, as ſtays, upright window bars, iron fenders, ſhutter bars, pump-work bolts, ſaddle bars, cramps, hold-faſts, wall-hooks, gudgeons, &c. from 3½ per lb. to - - -	0	0	4½
Pins, hoops, chains, hooks, &c. to ſtable bails, per lb. — —	0	0	4

As to the price of nails, hinges, latches, bolts, locks, &c. (which are almoſt innumerable) it not only would here be very tedious to give in particular, but alſo would be of very little uſe or ſatisfaction to any tradeſmen, as it is well known to thoſe who have occaſion for any quantity, that they may have a catalogue from the wholeſale Smiths, or Ironmongers, where they are ſold, together with the very loweſt prices thereof in general.

CHAP.

CHAP. XI.

Of ſquaring Dimenſions.

THE method of ſquaring dimenſions, or meaſuring the work of all artificers in general, relating to building, is chiefly perform'd by croſs multiplication, being that familiar and neceſſary part of arithmetic, which every artificer whatſoever ſhould endeavour to make himſelf perfectly acquainted with, notwithſtanding we frequently find too many deficient therein; therefore, being ſo univerſally neceſſary, both to tradeſmen, and the public in general, ſhall here, in the firſt place, lay down ſuch inſtructions, as ſhall render the ſame eaſy and intelligible to the very meaneſt capacity, regularly exemplifying all the different branches relating to the works of the ſaid artificers, both by X Multiplication at large, and alſo by inſpectionary tables.

The GENERAL RULE.

Feet multiplied by feet, produce feet; feet multiplied by inches, produce inches; feet multiplied by parts, produce parts, every twelve being one inch; inches multiplied by inches, produce parts; inches multiplied by parts, produce ſeconds, every twelve being one part; parts multiplied by parts, produce thirds, every twelve being one ſecond; by which it is neceſſary to obſerve, that twelve thirds make one ſecond, and

twelve ſeconds make one firſt part; twelve firſt parts make one inch, and twelve inches make one foot; therefore twelve is a general diviſor, and particularly to be obſerved in the method of ſquaring dimenſions throughout.

The following examples are explained at large, in order to qualify the learner to perform the ſame arithmetically, viz.

EXAMPLE.

Let 7 feet 9 inches be multiplied by 3 feet 6 inches.

f.	i.	p.	
7	9		Length
3	6		Breadth
23	3		product by 3 feet
3	10	6	ditto, by 6 inches
Feet 27	1	6	content

Firſt, multiply 9 inches by 3, ſaying, 3 times 9 is 27, which make 2 feet 3 inches; ſet down 3 under inches, and carry 2 to the feet, ſaying, 3 times 7 is 21, and 2 that I carry makes 23; ſet down 23 under the feet: then begin with 6 inches, ſaying, 6 times 9 is 54 parts, which is 4 inches; ſet down 6 parts, and carry 4, ſaying, 6 times 7 is 42, and 4 that I carry is 46 inches, which is 3 feet 10 inches, which ſet down, and add all up together, and the product is 27 feet, 1 inch, 6 parts.

Let

EXAMPLE II.

Let 75 feet 7 inches, be multiplied by 9 feet 8 inches.

	f.	i.	p.	
	75	7		Length
	9	8		Breadth
	680	3		product by 9 feet
	50	4	8	ditto by 8 inches
Feet	730	7	8	content

Firſt, multiply 9 feet, ſaying, 9 times 7 is 63, which is 5 feet 3 inches; ſet down 3, and carry 5, ſaying, 9 times 5 is 45, and 5 I carry is 50; ſet down 0, and carry 5, ſaying, 9 times 7 is 63, and 5 is 68; and proceed to multiply by 8 inches, ſaying, 8 times 7 is 56; the twelves in 56 is 4 times, and 8 remains; ſet down 8 in a place to the right hand, and carry 4; then multiply 75 by 8, which, divided by 12, the quotient is 50 feet, and 4 remains; ſet down 50 feet 5 inches, and add all up together, and you will find the product 730 feet, 7 inches, 8 parts.

EXAMPLE III.

A window is 6 feet 6 inches high, and 3 feet 4 inches broad, how many ſquare feet glazing are there?

	f.	i.	p.	
	6	6		Length
	3	4		Breadth
	2	2	0	product by 4 inches
	19	6	1	product by 3 feet
Feet	21	8	0	the anſwer.

A cieling is 13 feet broad, and 17 feet 4 inches long, how many ſquare yards doth it contain?

	f.	i.	
	17	4	Long
		13	Broad
	9)225	4	
ſquare yards	25		the anſwer.

A floor is 24 feet 6 inches long, and 17 feet 6 inches broad, how many ſquares doth it contain?

	f.	i.			f.	i.	
Length	24	6	Length		24	6	
Part of breadth	0	10	Remainder of breadth		7	6	
	245	0			12	3	0
	183	9			171	6	
Feet in a ſquare	100)428	9(4 ſquares			183	9	0
Feet	28	9 inches					

That is, 4 ſquares, 28 feet, and 9 inches.

Note, In the method of the above example, the breadth is divided into two parts, viz. the one, 10 feet, and the other, 7 feet 6 inches, which is 17 feet 6 inches, the products of which are added together, being much eaſier, when the breadth run large.

*** See the ſame wrought at one operation hereafter.

EXAM-

EXAMPLE IV.

If a room be 27 feet 6 inches long, and 17 feet 6 inches broad, how many ſquare feet are contained in that room?

The breadth divided into 10 feet, and 7 feet 6 inches; thus,

	f.	i.			f.	i.	p.
Length	27	6	Length		27	6	
Firſt by		10	Secondly by		7	6	
	295	0			13	9	
Added	206	3			192	6	
Feet	481	3			206	3	0

Anſwer, 481 ſquare feet and 3 inches.

EXAMPLE V.

If a board be 9 feet 9 inches long, and 1 foot 4 inches and 6 parts broad, what is the ſuperficial content of that board or plank?

	f.	i.	p.	f.	t.	
Length	9	9	0			
Breadth			1	4	6	
	0	4	10	6	0	by 6 parts
	3	3	0	0		by 4 inches
	9	9	0			by 1 foot
Feet	13	4	10	6	0	anſwer

If

If a plank be 9 feet 5 inches 6 parts long, and 3 feet 4 inches and 5 parts broad, how many ſquare feet are contained therein?

	f.	i.	p.	ſ.	t.	
Length	9	5	6			
Breadth			3	4	5	
	0	3	11	3	6	product by 5 parts
	3	1	10	0		ditto by 4 inches
	28	4	6			ditto by 3 feet
Feet	31	10	3	3	6	anſwer

Anſwer, 31 feet, 10 inches, 3 parts, 3 ſeconds, and 6 thirds.

EXAMPLE VI.

If a room be 109 feet 6 inches round, and 12 feet 4 inches high, how many ſquare feet are contained therein?

	f.	i.		
Length	109	6		
Height	12	4		
	36	9	0	product by 4 inches
	1314	0		ditto by 12 feet
Feet	1350	9	0	content

Anſwer, 1350 feet 9 inches.

There is a roof cover'd with tiles, whoſe depth on both ſides (with the uſual allowance at the eaves) is 35 feet 6 inches, and the length

48 feet 9 inches, how many squares of tiling are contained therein, wrought by half the breadth, which is 17 feet 9 inches? thus,

	f.	i.	p.			f.	i.	p.
Length	48	9			Length	48	9	
Part of the breadth		10			Remainder		7	9
	487	6				36	6	9
	377	9	9			341	3	
						377	9	9
Half content	865	3	9					
Ditto added	865	3	9					
Feet	1730	7	6	answer.				

In the above method, the content is first found for half the breadth; which being doubled, as in the example, by addition, make 1730 feet, 7 inches, and 6 parts, equal to 17 squares, 30 feet, 7 inches and an half.

Of DIGGING.

THIS work is done by the cubic, or solid yard, containing 27 feet, or 3 feet every way, viz. in length and breadth.

EXAMPLE.

A cellar, or lower part of a building, is designed, that is 45 feet 8 inches long, 21 feet 6 inches wide, and 6 feet 8 inches deep, what number of yards is therein contained?

	f.	i.	p.	
Length	45	8		
Width	21	6		
	22	10	0	product by 6 inches, equal half of 45 feet 8 inches
	49	0	0	product by 21 feet
	90			
Feet	971	10	0	ſuperficial content
Multiplied by depth	6	6		
	485	11	0	product by 6 * inches
	5831	0		ditto by 6 feet
Feet	6316	11	0	ſolid content

* *Note*, When you have any large number of feet to multiply by 6 inches, the moſt eaſy method is to take half thereof, which both ſaves the trouble of multiplying and dividing the product by 12, as in this example above.

An Explanation of the following Tables, adapted to meaſurement.

Theſe tables conſiſt of ſeveral columns, noted at the head of each of them with ſuch figures as repreſent the length of any meaſurement in feet and inches, thus, 1 f. 1 i. 1 f. 2 i. 1 f. 3 i. &c. under which is written, in each column, the word Content; and under that, theſe letters, f. i. p. which ſignify the content in feet, inches, and parts of an inch, according to the ſaid length given on the head of ſuch column, and the breadth in the left hand column, numbered downwards, with 2, 3, 4, 5, &c. to 11 inches, from thence with 1, 2, 3 feet, &c. to the bottom of

of each table; ſo that if you meaſure the length and breadth of any thing, and find the breadth in this column in the left hand ſide of each table, and the length at the head, the number which ſtands oppoſite in the common meeting of theſe two numbers, is the content thereof in feet and inches; the uſe of which is hereafter made evident by various examples.

Of BRICK WORK.

To reduce Brick-work of any thickneſs, to the ſtandard thickneſs of one brick and an half.

This is the Rule:

Multiply the number of feet contained in the ſuperficial content of the wall, by the number of half bricks that the wall is in thickneſs; which product, divided by 3, the quotient is the true content of the brick-work required, reduced to the ſtandard thickneſs of one brick and an half.

Note, When you meaſure two walls that conſtitute an angle, the length of one muſt be taken outſide, the other on the inſide; alſo, in reſpect to chimneys, meaſure them as the ſolid wall, and deduct the vacancy between the jaumbs, and the mantle funnels are allowed ſolid, in regard to the trouble, and the pargetting the inſide.

EXAMPLE.

Of the Reduction of Brick-work.

Suppoſe a wall (or the addition of ſeveral lengths of walling) to be 824 feet, and the

thickneſs of two bricks, how much reduced brick-work is therein?

ſuperficial content	324 feet
Multiplied by the number of ½ bricks	4
Divide by the number of ½ bricks in the ſtandard	3)1296(432 feet reduced
	12
	9
	9
	6
	6

To bring reduced feet into rods, this is the rule.

Divide the number of feet (reduced as above) by the number of ſquare feet in a rod, that is, 272 ¼; but as this is always uſed for a diviſor, the fractional part ¼, is commonly omitted; as the value thereof, even in a large number of feet, would ſcarcely be material.

Example as above.

feet in a rod is	16 ½	number of feet to be divided, is	
Multiplied	16 ½	r. q.	f.
	96	272)432(1 2	24
	16	272	
for the parts	16 ¼	*68)160)2 qrs. facit	
diviſor	272(¼	136	
or ſq. f. in a rod		remains 24 feet	

* Note 68 feet is a quarter of a rod; thus,

4)272(68 feet
24

32
32

This laſt example may be ſufficient to ſhew the true method of reducing brick-work of any thickneſs, to the ſtandard thickneſs of one brick and an half thick; and alſo to give the content (when ſo reduced) in rods, &c.—But whereas I have calculated tables, in the firſt part of this book, which readily gives the content of any dimenſions hereof, ready reduced, there will be little need of taking ſo tedious a method as this, unleſs it be thoſe who are ſomewhat already acquainted with figures, and chooſe to ſatisfy themſelves with the nature and reaſon thereof, which, in ſuch caſe, undoubtedly is very neceſſary.

How to perform the meaſurement of Brick-work, by the following Tables.

EXAMPLE I.

If a brick wall be 40 feet long, 9 feet 11 inches high, and 1 ½ brick thick, how many rod and feet doth it contain?

Look for that table on which it hath on the head, 40 feet, (the length of the wall) which being done, ſeek in the left hand column for 9 feet 11 inches, (the height thereof) firſt taking 9 feet, guiding your finger on the ſame line, till you come to that column whereon it hath 40 feet at head, where you will find 360 feet; in like manner ſeek the 11 inches, (the remainder of the height) and you will find 36 feet 8 inches, which being added, make

f.	i.	
360		
36	8	
396	8	the content thereof in feet

which, to bring into rods, &c. you have been ſhewn in the former example; otherwiſe, refer to the reduced tables in the firſt part, where you will find the number of rods therein contained.

The proof by Multiplication.

	f.	i.	p.				
Length	40	0					
Height		9	11				
	36	8	0				
	360	0					
				r.	qr.	f.	i.
feet in a rod 272)	396	8	0	(1	1	56	8
	272					facit	
	68)124(1 qr.						
	68						
	feet 56						

EXAMPLE II.

A piece of Tiling is 40 feet long, and 10 feet 6 inches broad, how many ſquares are therein contained?

Seek as before directed for the table of your length, viz. 40 feet; then find the breadth, 10 feet, in the left hand column, for which you will find, in the common meeting of the ſaid length and breadth, 400 feet; then ſeek 6 inches (the complement of the breadth) for which you will find 20 feet; theſe added together, make 420 feet, the content thereof, which, to bring into

into ſquares, is only cutting off the 20; and the 4 ſo cut off on the left hand ſide, is 4 ſquares, and the 20 on the right, are remaining feet, and equal to 1-5th part of a ſquare more, thus,

4|'20 equal to 4 ſquares and 20 feet;

or thus, if you can divide,

feet in a ſquare 100)420(4 ſquares, 20 feet
400

120 feet

See the proof by Multiplication underneath.

The proof.

	f.	i.	p.	
Length	40	0		
Breadth	10	6		take half 40 for 6 inches
	20	0	0	which here is 20 feet
	400	0		product by 10 feet
content f.	420	0		divided by 100 for the ſq.

thus,

1|00)4|'20(

equal 4 ſquares 20 feet, as required.

EXAMPLE III.

How many ſquares are there in a piece of tyling?

the length being 50 feet
and breadth 30 feet

ſquares 15|'00

facit.

Of

Of CARPENTERS WORK.

TO meaſure the body of a timber building, take the length of one ſide and one end, and add them together, and multiply that ſum by the height, (taken from the under-ſide of the cill, to the upper-ſide of the riſing) gives the content of one ſide and one end; which, being doubled, give the content of the whole body of the building in feet.

EXAMPLE.

If a timber building be 35 feet 6 inches long, 18 feet 3 inches broad, and height of the building 19 feet, how many ſquares of framing are therein contained?

By Multiplication.

	f.	i.
Length	35	6
Breadth	18	3
Product added	53	9

Multiplied by height 19 f. xd. by 9 is 19

feet	1021	3
doubled, or xd. by		2
Divide by 100 is	20(42	6
	sq. f.	i.

12)171(14 f. to carry, & 3 i. to ſet down
12
51
48
3 inches

content of the two ſides and ends, or whole building.

Or

Or by this method, which is much easier;

Divide the height into f. 10 and f. 9 which equal 19 feet

and proceed thus by two operations.

	f.	i.		f.	i.
Length and breadth added	53	9	Ditto	53	9
Part of the height		10	Remaining height		9
feet	537	6	feet	483	9
added	483	9			
	1021	3			
		2 doubled			

whole content as above, is - - - { 20 | 42 6 } equal to 20 squares, 42 feet, 6 inches.

By the Tables,

The product of the length and breadth, here added, is 53 feet 9 inches, which exceed the extent of those tables; therefore it will be necessary for the reader to observe the following method: first, to take the table

	f.	i.	
	33	9	length
and	20		ditto
feet	53	9	

which, together, make the required product, viz. 53 feet 9 inches; and so proceed; first, with 20 feet 9 inches. Having in this table found the breadth 19 feet, you will find the content to be 380 feet; then proceed to table 33 feet length, and for the said breadth 19 feet,

you will find 627 feet; but whereas, the odd 9 inches belonging to this table, is wanting, you muſt take (according to the rule) 3 parts of 19 feet, (the height) which is 14 feet 3 inches; and theſe being added together, and doubled, will make 2042 feet 6 inches, as before; thus,

	f.	i.		f.	i.	
Table	33	9	long	641	3	
Table	20		ditto	380	0	
the height	53	9	is	10|21	3	as before

		sq.	f.	i.
	Anſwer	10	21	3
which doubled, make as required		10	21	3
		20	42	6

EXAMPLE.

A floor is 24 feet 6 inches long, and 17 feet 6 inches wide, how many ſquares doth it contain?

	f.	i.	p.	
Length	24	6		
Width		17	6	take half 24 feet 6 inches, for 6 inches
	12	3	0	the product
	176	6		product by 17 feet
	240	0		
feet	4|28	9	0	content in feet

Anſwer 4 ſquares, 28 feet, 9 inches.

Note, You may divide the width, 17 feet 6 inches, into 9 feet, and 8 feet 6 inches, and work at two operations, as before.

Of

Of ROOFING.

IT is uſually a rule amongſt workmen, that the flat of any houſe, and half the flat thereof, (taken within the walls) is equal to the meaſures of the roof of the ſame houſe; but this is, when the roof is true pitched; for if the roof be more flat, or ſteep, than the true pitch, it will conſequently meaſure more or leſs.

EXAMPLE I.

If a houſe within the walls be 46 feet 9 inches long, and 20 feet 6 inches broad, how many ſquares of roofing will cover that houſe?

RULE.

Multiply the length and breadth together, and the product is the number of feet contain'd in the flat; then take the half thereof, and add to the flat; that ſum divided by 100, is the number of ſquares contained therein.

EXAMPLE II.

	f.	i.	p.				
Length	46	9					
Breadth		20	6				
	23	4	9				
	925	0					
flat	948	4	6		facet		
half	474	2	3	14	22	6	9
	14 | 22	6	9	sq.	f.	i.	p.
	sq. f.	i.	p.				

EXAMPLE III.

Suppoſe a four-pannel ſquare door be 5 feet 1 inch in height, and 3 feet 4 inches broad, how many feet doth that door contain?

Having found the table agreeable to your height, 5 feet 1 inch, look for the width thereof, 3 feet 4 inches; oppoſite which, in the common meeting of the ſaid numbers, you will find as follows, viz. for 3 feet, 15 feet 3 inches; and for 4 inches, 1 foot 8 inches and 4 parts, which, being added together, make 16 feet 11 inches and 4 parts, the content thereof; thus,

	f.	i.	p.
content for 3 feet in width	15	3	0
ditto for 4 inches ditto	1	8	3
content in ſquare feet	16	11	3

The proof by Croſs Multiplication.

	f.	i.	p.	
Length	5	1		
Breadth	3	4		
	15	3		content by 3 feet
	1	8	4	content by 4 inches
feet	16	11	4	content required

Or thus, by a ſecond method.

	f.	i.	p.	
Length	5	1		
Breadth		3	4	
	1	8	4	content by 4 inches
	15	3		content by 3 feet
feet	16	11	4	content required

The foregoing examples, together with the former directions, being well obſerved, may enable the reader to find the content of any dimenſions almoſt whatſoever required, if the ſaid length and breadth of ſuch given dimenſion, do not exceed the extent of theſe tables, which, if ſo, will require a little more difficulty; but ſhall, hereafter, make it even then eaſily to be underſtood by a few examples; therefore, ſhall give a few more in this place, for practice in the common way.

EXAMPLE IV.

Suppoſe a boarded floor, or cieling, wainſcot of a room, &c. be in length 24 feet, and in breadth 18 feet 9 inches, how many feet, inches, and parts, are therein contained?

Firſt, look for the table expreſſing your length, viz. 24 feet, in which ſeek your breadth, 18 feet 9 inches, and you will find, oppoſite 9 inches, the content to be 18 feet; and oppoſite 18 feet, the content to be 432 feet, which, being added, make 450 feet, the content required.

Proof by Croſs Multiplication.

	f.	i.	p.		
Length	24	0	}	memorandum by	9
Breadth	18	9	}		
	432	0		content by 18 feet	
	18	0	0	content by 9 inches	
feet	450	0	0	content required.	

24
9
12)216(18
12
96
96

By

By a ſecond method.

	f.	i.	p.	
Length	24	0	0	
Breadth	18	9		
	18	0	0	content by 9 inches
	432	0	0	content by 18 feet
Feet	450	0	0	content required.

By theſe directions, all dimenſions of moderate extents, may be ſquar'd with eaſe, to the greateſt exactneſs: and when the nature of the work require the content in ſquare yards, ſuch as painting, plaſtering, &c. it is only dividing the ſaid content by 9, the feet in a ſquare yard, and the quotient is the anſwer. One example may be ſufficient to inſtruct any perſon deficient therein.

Example of the above:

feet in a ſquare yard } 9)450(50 content in yds as req.

45

0

N. B. In Carpenters work, flooring, partitioning, and roofing, are commonly meaſured by the ſquare of 10 feet long, and 10 feet wide; ſo that 1 ſquare contains 100 ſquare feet. The method of finding the number of ſquares in any number of feet, is only dividing by 100, and the quotient is the anſwer; which ſuppoſe the above,

above, thus, 100)450(4 ſquares and 50 feet, equal to ½ ſquare; or by cutting off the two cyphers, thus, 1‖00)4(50, that is, 4 ſquares and 50 feet over, which is equal to half a ſquare more; and ſo of any larger number. See more examples hereafter.

EXAMPLE V.

Suppoſe a room be 20 feet long, and 11 feet 6 inches broad, how many ſquare feet are contained therein?

Seek for the table of 20 feet long, according as before directed; which being done, look down the ſame column, till you come oppoſite 11 feet, the breadth, and you will find 220 feet; and for 6 inches, (the remainder of the breadth) you will find 10 feet, which being added to the former, make 230 feet, the full ſuperficial content requir'd.

The proof.

	f.	i.	p.	
Length	20	0	0	
Breadth	11	6	0	
	220	0	0	content by 11 feet
	10	0	0	ditto by 6 inches
Feet	230	0	0	content required.

EXAMPLE VI.

Suppoſe the compaſs round a room meaſure 50 feet, and the height 9 feet 6 inches, how many feet are contained therein?

Compaſs

	f.	i.	p.	
Compaſs	50	0	0	
Height	9	6	0	
	25	0	0	for 6 i. being the ½ of 50 f.
	450	0	0	for 9 feet
Feet	475	0	0	content requir'd.

The reader is deſired alſo to obſerve, that notwithſtanding theſe tables are not calculated any further than 20 feet in length, by every ſingle inch, yet all dimenſions in the common way, may be ſquared within this compaſs; and in reſpect to buſineſs of greater extent, the remaining tables of 1 foot each, will be found ſufficient to ſolve any that may be requir'd, at pleaſure. An example or two, for practice, will make it appear very eaſy, if properly obſerv'd, which ſuppoſe as follows, viz.

Length 100 feet, and breadth 37 feet 10 inches, what is the content in ſquare feet.

Firſt, ſeek the table neareſt to agree with your length, which is that of 50 feet (being the laſt table); next, ſeek out your breadth, which is 37 feet 10 inches, for which you will find, for 10 inches 41 feet, 8 inches content; and for 37 feet, 350 feet content; and for 30 feet, (the complement of your breadth) 1500 feet in content, which, being all added, make the true content for 50 feet in length, thus, as in the following page.

Content

	f.	i.
Content of 30 feet — —	1500	
content of 7 feet - - - -	350	
content of 10 inches - - -	41	8
content of 37 feet 10 inches - -	1891	8

And whereas, your dimenſion was required for 100 feet in length, you muſt double this content, and the product is the content requir'd, viz. for 100 feet in length; for twice 50 is 100, thus,

	f.	i.
content of 50 feet long - - - -	1891	8
content of 50 ditto - - - - -	1891	8
content of feet, 100, as requir'd -	3783	4

or thus, if you can multiply;

f.	i.	
1891	8	content of 50 feet long
by	2	
3783	4	content as required for 100 feet.

Example of the proof by Croſs Multiplication.

	f.	i.	p.	
Length	100	0		
Breadth	37	10		
	700	0		product by 37 feet
	300	0		
	83	4	0	product by 10 inches
Feet	3783	4	0	content requir'd.

There is, in the next place, a neceſſary point to explain to the reader, in reſpect to the inches wanting in the tables, viz. between thoſe of 20 and 50 feet in length, which increaſe 1 foot at each ſtep; therefore, where there are inches included with the feet, as commonly is the caſe in moſt dimenſions promiſcuouſly taken, (in lengths as well as breadths) it will ſometimes perhaps happen, that ſuch lengths as are required, cannot exactly be found here, as in the former part of theſe tables of feet and inches, which, without ſome method laid down to facilitate the ſame, the reader, no doubt, would find ſome difficulty; therefore it will be very neceſſary to obſerve the following directions, viz. When the exact length can only be found, agreeable in feet with your given dimenſion, but deficient in the inches, obſerve

This RULE.

If the number of inches deficient in length, be 1, add 1-12th part of the given breadth to the product; if 2, add 1-6th; if 3, add 1-4th; if 4, add 1-3d; if 6, add 1-half; if 9, add 3-4ths: as for the reſt, or intermediate inches, 5, 8, 10 and 11, they may eaſily be imagined to the leaſt difference poſſible.

Note, That the inches in the breadth will never be found deficient.

EXAMPLE.

Suppoſe the length be 38 feet 6 inches, and breadth 27 feet 9 inches, what is the content in feet, inches, and parts?

The table of 38 feet long, following, agrees with your length in feet, but in inches, deficient, therefore seek your breadth, 27 feet 9 inches, (the contents for which, are as follows) viz. for 9 inches, 28 feet 6 inches; for 7 feet, 266 feet, and for 20 feet, 760 feet, which added, make 1054 feet 6 inches; then for the 6 inches wanting in length, (according to the former directions) take half of the breadth, 27 feet 9 inches, which is 13 feet, 10 inches, 6 parts; which, added to the above, make 1068 feet, 4 inches, 6 parts, the content required.

The proof by Croſs Multiplication.

	f.	i.	p.	
Length	38	6		breadth
Breadth	27	9		
	269	6	}	content by 27 feet
	77		}	
	28	10	6	content by 9 inches
feet	1068	4	6	content required.

Theſe two laſt methods will only be requir'd, when the work run to conſiderable extents in the dimenſions, which ſeldom happen in the common courſe of buſineſs.

EXAMPLE.

Suppoſe a door be 6 feet 4 inches high, and 3 feet 9 inches broad, how many feet doth that door contain?

	f.	i.	p.	
Length	6	4		
Breadth	3	9		
	19	0		by 3 feet
	4	9	0	by 9 inches
content feet	23	9	0	required.

EXAMPLE.

Suppoſe a floor be 57 feet 3 inches long, and 28 feet 6 inches broad, how many ſquares of flooring are therein?

	f.	i.	p.
Length - - - - - - -	57	3	
Half the breadth -		14	4
Product by 4 inches -	19	1	0
Ditto by 14 feet - - -	231	6	
	57		
Half content - -	820	7	0
Multiply by - - -			2
Content feet - - -	16	41	2 0

Anſwer, 16 ſquares, 41 feet, 2 inches.

Note, In the above example, the breadth is divided into half; therefore that content being doubled, (or multiplied by 2, as is here) the product is the anſwer, which method may occaſionally be uſed, as it will ſave much trouble in the work.

Of

Of PLAISTERERS WORK.

A Cieling is 14 feet broad, and 17 feet 6 inches long, how many yards doth it contain?

Seek for the table agreeable to your length, viz. 17 feet 6 inches; which being done, you will find, for 14 feet in breadth, 245 feet, which, to bring into ſquare yards, you muſt divide by 9, the number of feet in a ſquare yard; or if you cannot divide, you may find 245 in the laſt table in this book, adapted for this purpoſe, where you will have your deſire by inſpection.

Note, It will ſometimes fall out, that you cannot find the exact number you want in the ſaid table; but, if you take the neareſt thereunto, not exceeding, you will have the number of ſquare yards therein, and the deficiency is remaining feet, as in the above example; the neareſt number to 245, is in the table thus diſtinguiſhed a * 243, the ſquare yards in which is 27, ſo that the difference between the ſaid numbers being only 2, they are remaining feet, over and above 27 ſquare yards, as required.

The

The proof by Multiplication.

	f.	i.	
Length	17	6	
Breadth		14	feet
	75	0	
	17		yds. f.
Divided by 9)245		0(27	2 proof
	18		
	·65		
	63		
Remain	2		

Of RENDERING.

If the partitions between rooms be 140 feet 6 inches about, and 11 feet 3 inches high, how many yards are in thoſe partitions?

It will be neceſſary here to obſerve, that the given length exceed the extent of thoſe tables, therefore you may divide it into two parts, viz. 100, and 40, and ſo proceed thus: Firſt, for part of the length, 40 feet, ſeek as uſual for the breadth, viz. 11 feet, and you will find 440 feet; and for 3 inches 10 feet, which together make 450 feet; then for the remaining 100 feet in length, take the table 50, and double it, which is equal to 100; therefore for the breadth, 11 feet, you will find 550 feet; and for 3 inches 12 feet 6 inches, which, together, make 562 feet 6 inches (for 50 feet in length); this

	f.	i.	
this being doubled	562	6	
	562	6	
make - - feet	1125	0	equal to 100 f. in length
to which add - - -	450	0	content of 40 f. in length
the product is, feet	1575	0	equal to 140 f. in length as requir'd

The proof by Croſs Multiplication.

	f.	i.	p
Length	140	0	
Breadth		11	3
	35	0	0
	1540	0	0
9)1575	0	0	(175 ſquare yards
	9		
	67		
	63		
	45		
	45		

Seek 1575 in the table thus diſtinguiſhed e*, and you will find as above, 175 ſq. yards.

A cieling is 20 feet 6 inches long, and 14 feet 11 inches broad, how many ſquare yards doth it contain?

	f.	i.	p.	
Length	20	6		
Breadth		14	11	
	19	7	6	product by 11 inches
	287	0	0	ditto by 14 feet
Feet	306	7	6	content in ſquare feet

Divide the beforementioned feet by 9, the feet in a ſquare yard, thus,

Feet 9(306(34 ſquare yards, to which bring down 7 feet 6 parts,
27 and the content is 34 yards, 7 feet, 6 parts.
36
36

Note, You may practice the above by the tables, at your leiſure, therefore ſhall omit this example for that purpoſe, as I preſume the foregoing examples will be found ſufficient to explain the uſe thereof.

Of PAINTERS WORK.

EXAMPLE.

IF a room be painted, whoſe height (being girt over the mouldings) is 16 feet 6 inches, and compaſs of the room 47 feet 6 inches, how many yards are in that room?

By the Tables;

Seek your table anſwering 47 feet 6 inches (but the 6 inches not being in the table, proceed thus with 47 feet only); having found your height, 16 feet 6 inches, (in the breadth column of the ſaid table) you will find as follows, viz. for 16 feet, 752 feet; and for 6 inches, 23 feet 6 inches, obſerving now the general rule; for 6 inches belonging the 47 feet, to take half of the height, which will be 8 feet 3 inches; theſe being all added together, will produce the true content in feet, Thus,

thus,

	f.	i.
for 16 feet you have - - - -	752	0
for 6 inches you have - - -	23	6
for 6 inches, part of the compaſs,	8	3

which added, make feet - } 9)783 9(87 yards 9 inches
which divided by - - - } 72
is 87 yards 9 inches

63
63

the content in yards as required.

See the proof by Multiplication.

	f.	i.	p.	
Compaſs of the room	47	6		
Height of ditto - -		16	6	
	23	9	0	by 6 inches
	290	0		by 16 feet
	47			

to find the ſquare yards 9)783 9 0 (87 yards 9 inches
72
facit
63
63

The height of a painted room is 18 feet 6 inches, and compaſs 50 feet, how many yards of painting is there contained?

	f.	i.			f.	i.	p.
Length - - -	50	0	Ditto - - -		50	0	
Breadth divided		9	Remaining height		9	6	
Feet - -	450	0			25	0	0
added - -	475	0			450	0	
content is -	)925	0		Feet	475	0	0

divided by 9 is yds. 103 7 feet

facit

Which you may prove as uſual by the tables.

A Painter hath painted a large hall, the height whereof is 23 feet, and is 120 feet about, how many ſquare yards of painting is therein contained?

Length (or round) about the hall is

	feet
in compaſs	120
in height	23
	360
	240

9)2760(306 yds. 6 feet, as required.
27··
··60
54
·6

To perform the ſame by the table, proceed thus:

The compaſs of the hall exceeding the tables, the beſt method will be, to work by table 40 feet in length, which, being tripled on 3 times, added, will make juſt 120, the required number; therefore, in the ſaid table, oppoſite the height 20 feet, you will find 800; and for 3 feet, 120 feet, which make 920 feet, the triple of which is 2760 feet as above.

Of

Of GLAZIERS WORK.

EXAMPLE I.

Suppoſe a window be 6 feet 4 inches high, and 3 feet 6 inches broad, how many ſquare feet of glazing are therein?

	f.	i.	p.	
Height	6	4		
Breadth	3	6		
	3	2	0	product by 6 inches
	19	0		ditto by 3 feet
Feet	22	2	0	content required.

EXAMPLE II.

A Glazier hath glazed a window, containing 8 panes of glaſs, the depth of each pane being 2 feet 5 inches, and the length of the 8 panes together are 13 feet, how many feet of glazing are contain'd in that window?

	f.	i.	p.	
Length	13	0		
Breadth		2	6	
	5	5	0	product by 5 inches
	26	0		ditto by 2 feet
content feet	31	5	0	anſwer.

Collect the tables according to the above dimenſions, and you will find the content as above.

EXAMPLE III.

There are 8 panes of glaſs, each 4 feet 7 inches and 9 parts long, and 1 foot 6 inches 4 parts broad, how many feet of glaſs are contained in the ſaid 8 panes?

	f.	i.	p.			
Length	4	7	9			
Breadth	1	6	4			
	4	7	9			product by 1 f.
	2	3	10	6		ditto by 6 i.
	0	1	6	7	0	ditto by 4 parts
Feet	7	1	2	1	0	content 1 pane
					8	numb. of panes
content feet	56	9	4	8	0	of the whole p.

Or thus, by the Tables:

After you have found the content of 1 pane, which as above is 7 feet 1 inch, (the parts not being material) find the table of 8 feet long (the number of all the panes); and oppoſite the other number, 7 feet 1 inch, you will find thus; for 7 feet, 56 feet; and for 1 inch, 8 inches (being the half of 2 inches); which added, make 56 feet 8 inches, only differing (on account of the parts being omitted) 1 inch from the above method.

If

If a pane of glaſs be 4 feet 9 inches long, and 3 feet 2 inches broad, how many feet are contain'd therein?

By Multiplication.

	f.	i.	p.	
Length	4	9		
Breadth		3	2	
	0	9	6	product by 2 inches
	14	3		ditto by 3 feet
content feet	15	0	6	as required.

By the table of 4 feet 9 inches in length, you will find as follows, viz.

	f.	i.	p.	
For 3 feet broad -	14	3		
for 2 inches ditto - -	0	9	6	
which together is, feet	15	0	6	as above

Note, To thoſe who are not expert in caſting up, or valuing any number of feet, yards, ſquares, &c. (at ſuch a given price) ſhall refer them to the valuing table hereafter contained, being ready calculated for their uſe, to any number or price.

EXAMPLE.

Suppoſe a window to contain 8 panes of glaſs, the depth of each pane to meaſure 10 inches and 6 parts, and the length of all the panes added together, 8 feet 10 inches, how many feet of glazing is in that window?

Note,

Note, As the extent of theſe tables only reach to 5 feet ſquare, the length here required cannot be found, therefore you muſt take half thereof, which is 4 feet 5 inches; which being found at the head of the table, look down the ſame column, till you come oppoſite the given depth of the pane, viz. 10 inches 6 parts, and you will find 3 feet 10 inches and 4 parts, which is half the content required; therefore muſt be doubled, and it will make 7 feet, 8 inches, 8 parts, the content of that window.

The proof

	f.	i.	p.	f.	t.	
Length	8	10	0			
Depth			0	10	6	
	0	4	5	0	0	
	7	4	4	0		
Feet	7	8	9	0	0	content required.
	f.	i.	p.	f.	t.	

EXAMPLE II.

Suppoſe a window contain 12 panes, which added together, make 15 feet 9 inches in length, the depth of each pane 2 feet, 10 inches, and 6 parts, how many feet of glazing are therein contained?

In the preceding tables, firſt look out for the length thereof at the head, viz. 15 feet 9 inches; then looking down the ſame column, till you come oppoſite to the depth, 2 feet, you will find

31 feet

31 feet 6 inches; and for 10 inches, 13 feet 1 inch 6 parts; which being added, make 44 feet 7 inches 6 parts; as to the 6 parts, (which is yet wanting in the depth) you may take 1-4th part from the content of 2 inches, (the firſt breadth in the table) which here is 2 feet 7 inches 6 parts; the 4th part of which will be 7 inches 10 parts more; which being added to the above, make 45 feet 3 inches 4 parts, the content required, thus,

					f.	i.	p.	
Content for	2			feet depth	31	6	0	
Ditto for	0	10		inches ditto	13	1	6	
Ditto for	0	0	6	parts ditto	0	7	10	
Whole depth feet	2	10	6		45	3	4	cont. req.

By a due obſervation of theſe examples, it will appear very eaſy to ſquare any work of the like nature; notwithſtanding, to render the ſame more intelligible, I have found out a method which will greatly facilitate the nature of ſquaring all ſuch meaſurements, as conſiſt of any number of parts, either in length or breadth, being all contain'd in the following table, and explain'd to the meaneſt capacity, by ſuch neceſſary examples, as will ſufficiently qualify the learner to perform the ſame to the neareſt exactneſs poſſible, being a work which far exceedeth any thing of the like nature; for by this table, all ſmall dimenſions contained within an inch meaſure, either in length or breadth, may be found, by inſpection, from 1 inch, to the extent of 50 feet ſquare.

The

The TABLE.

The Number of Parts in an Inch broad.

	2			3			4			5			6			
length	Content			Content			Content			Content			Content			
f. i.	f.	i.	p.	f.	i.	p.	f.	i.	p.	f.	i.	p.	f.	i.	p.	f.
0 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
0 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
0 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
0 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
0 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
0 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
0 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
0 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6
0 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
0 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6
1 0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	6	
2 0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	
3 0	0	0	6	0	0	9	0	1	0	0	1	3	0	1	6	
4 0	0	0	8	0	1	0	0	1	4	0	1	8	0	2	0	
5 0	0	0	10	0	1	3	0	1	8	0	2	1	0	2	6	
6 0	0	1	0	0	1	6	0	2	0	0	2	6	0	3	0	
7 0	0	1	2	0	1	9	0	2	4	0	2	11	0	3	6	
8 0	0	1	4	0	2	0	0	2	8	0	3	4	0	4	0	
9 0	0	1	6	0	2	3	0	3	0	0	3	9	0	4	6	
10 0	0	1	8	0	2	6	0	3	4	0	4	2	0	5	0	
11 0	0	1	10	0	2	9	0	3	8	0	4	7	0	5	6	
12 0	0	2	0	0	3	0	0	4	0	0	5	0	0	6	0	
13 0	0	2	2	0	3	3	0	4	4	0	5	5	0	6	6	
14 0	0	2	4	0	3	6	0	4	8	0	5	10	0	7	0	
15 0	0	2	6	0	3	9	0	5	0	0	6	3	0	7	6	
16 0	0	2	8	0	4	0	0	5	4	0	6	8	0	8	0	
17 0	0	2	10	0	4	3	0	5	8	0	7	1	0	8	6	
18 0	0	3	0	0	4	6	0	6	0	0	7	6	0	9	0	
19 0	0	3	2	0	4	9	0	6	4	0	7	11	0	9	6	
20 0	0	3	4	0	5	0	0	6	8	0	8	4	0	10	0	
21 0	0	3	6	0	5	3	0	7	0	0	8	9	0	10	6	
22 0	0	3	8	0	5	6	0	7	4	0	9	2	0	11	0	
23 0	0	3	10	0	5	9	0	7	8	0	9	7	0	11	6	
24 0	0	4	0	0	6	0	0	8	0	0	10	0	1	0	0	
25 0	0	4	2	0	6	3	0	8	4	0	10	5	1	0	6	

The foregoing Table continued.

The Number of Parts in an Inch.

	2	3	4	5	6
length f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
26 0	0 4 4	0 6 6	0 8 8	0 10 10	1 3 0
27 0	0 4 6	0 6 9	0 9 0	0 11 3	1 3 6
28 0	0 4 8	0 7 0	0 9 4	0 11 8	1 4 0
29 0	0 4 10	0 7 3	0 9 8	1 0 1	1 4 6
30 0	0 5 0	0 7 6	0 10 0	1 0 6	1 5 0
40 0	0 6 8	0 10 0	1 3 4	1 6 08	1 8 0
50 0	0 8 4	1 2 6	1 6 8	1 8 10	2 1 0

The TABLE.

The Number of Parts in an Inch.

	7	8	9	10	11
length f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
2	0 1 1	0 0 1	0 0 1	0 0 1	0 0 1
3	0 0 1	0 0 2	0 0 2	0 0 2	0 0 2
4	0 0 2	0 0 2	0 0 3	0 0 3	0 0 3
5	0 0 2	0 0 3	0 0 4	0 0 4	0 0 4
6	0 3 3	0 0 4	0 0 4	0 0 5	0 0 5
7	0 0 4	0 0 4	0 0 5	0 0 5	0 0 6
8	0 0 4	0 0 5	0 0 6	0 0 6	0 0 7
9	0 0 5	0 0 6	0 0 7	0 0 7	0 0 8
10	0 0 5	0 0 7	0 0 7	0 0 8	0 0 9
11	0 0 6	0 0 7	0 0 8	0 0 9	0 0 10
1 0	0 0 7	0 0 8	0 0 9	0 0 10	0 0 11
2 0	0 1 2	0 1 4	0 1 6	0 1 8	0 1 10
3 0	0 1 9	0 2 0	0 2 3	0 2 6	0 2 9

The foregoing Table continued.

The Number of Parts in an Inch.

		7			8			9			10			11		
length		Content			Content			Content			Content			Content		
f.	i.	f.	i.	p.	f.	i.	p.	f.	i.	p.	f.	i.	p.	f.	i.	p.
4	0	0	2	4	0	2	8	0	3	0	0	3	4	0	3	8
5	0	0	2	11	0	3	4	0	3	9	0	4	2	0	4	7
6	0	0	3	6	0	4	0	0	4	6	0	5	0	0	5	6
7	0	0	4	1	0	4	8	0	5	3	0	5	10	0	6	5
8	0	0	4	8	0	5	4	0	6	0	0	6	8	0	7	4
9	0	0	5	3	0	6	0	0	6	9	0	7	6	0	8	3
10	0	0	5	10	0	6	8	0	7	6	0	8	4	0	9	2
11	0	0	6	5	0	7	4	0	8	3	0	9	2	0	10	1
12	0	0	7	0	0	8	0	0	9	0	0	10	0	0	11	0
13	0	0	7	7	0	8	8	0	9	9	0	10	10	0	11	11
14	0	0	8	2	0	9	4	0	10	6	0	11	8	1	0	10
15	0	0	8	9	0	10	0	0	11	3	1	0	6	1	1	9
16	0	0	9	4	0	10	8	1	0	0	1	1	4	1	2	8
17	0	0	9	11	0	11	4	1	0	9	1	2	2	1	3	7
18	0	0	10	6	1	0	0	1	1	6	1	3	0	1	4	6
19	0	0	11	1	1	0	8	1	2	3	1	3	10	1	5	5
20	0	0	11	8	1	1	4	1	3	0	1	4	8	1	6	4
21	0	1	0	3	1	2	0	1	3	9	1	5	6	1	7	3
22	0	1	0	10	1	2	8	1	4	6	1	6	4	1	8	2
23	0	1	1	5	1	3	4	1	5	3	1	7	2	1	9	1
24	0	1	2	0	1	4	0	1	6	0	1	8	0	1	10	0
25	0	1	2	7	1	4	8	1	6	9	1	8	10	1	10	11
26	0	1	3	2	1	5	4	1	7	6	1	9	8	1	11	10
27	0	1	3	9	1	6	0	1	8	3	1	10	6	2	0	9
28	0	1	4	4	1	6	8	1	9	0	1	11	4	2	1	8
29	0	1	4	11	1	7	4	1	9	9	2	0	2	2	2	7
30	0	1	5	6	1	8	0	1	10	6	2	1	0	2	3	6
40	0	1	11	4	2	2	8	2	6	0	2	9	4	3	0	8
50	0	2	5	2	2	9	4	3	1	6	3	5	8	3	9	10

Expla-

Explanation of the laſt Table.

This Table conſiſteth of 12 columns, numbered on the head with 2, 3, 4, 5, &c. ſignifying the parts of an inch, (excepting the firſt column on the left hand, which contain the number of the lengths or breadths of any meaſurement) as hereafter will be made more intelligible, by the following examples.

EXAMPLE I.

Let it be required to multiply 3 feet 9 inches in length, by 9 parts of an inch in breadth.

Look for that column which hath on the head thereof, 9 parts; then guiding your finger down that column, till you come oppoſite 9 inches (belonging to your length) in the left hand column, and you will find 7 parts of an inch; then going down the ſame column, till you come oppoſite 3 feet, (the remainder of your length) and you will there find 2 inches and 3 parts; which being added to the former 7 parts, make 2 inches and 10 parts, the content thereof.

The Proof.

	f.	i.	p.	f.	
Length	3	9			
Breadth		0	0	9	
feet	0	2	19	9	content.
			9		

Note, The 3 ſeconds (which here exceedeth that in the tables) is of ſo trifling a value, that I

ſhall not take notice thereof; having calculated the ſaid table no further than parts of an inch, which is as near as any work require.

EXAMPLE II.

Suppoſe the length of any meaſurement to be 12 feet 7 inches, and the remainder of any breadth (thereunto belonging) be 11 parts of an inch, what is the content in feet, inches, and parts?

According to the former direction, ſeek firſt, the column which hath on the head thereof, 11 parts; then look down the ſame, until you come oppoſite 7 inches, (belonging the length) and you will find 6 parts of an inch; and oppoſite 12 feet, (the complement of the length) you will find 11 inches; which together, make 11 inches and 6 parts, the content thereof.

The proof.

	f.	i.	p.	f.	t.
Length	12	7	0		
Breadth			0	0	11
feet	0	11	6	5	0

Theſe examples will, I preſume, be ſufficient to ſhew the great utility of the ſaid table; yet it may not be unneceſſary to acquaint the reader, That whereas, the enſuing tables do only meaſure by the length and breadth given in feet and inches, which in moſt caſes is ſufficient; yet this

table

table will find the content of the remaining parts of an inch, when it ſo falls out, to any length or breadth required.

How to find the value of all ſuch parts of an inch, as may pertain to either length or breadth, in order to ſupply the following tables, whenſoever found deficient therein.

EXAMPLE.

Suppoſe the length of any meaſurement to be 10 feet 9 inches and 6 parts; and the breadth, depth, or height, be 7 feet 6 inches and 9 parts, how many ſquare feet are contained therein?

By the following tables, as before directed, firſt, find out that agreeable to your length, viz. 10 feet 9 inches; which being done, ſeek your breadth in the left hand column, viz. firſt, 7 feet; oppoſite which, you will find 75 feet 3 inches; and in the ſame column, oppoſite 6 inches, (the remaining part of the breadth) you will find 5 feet 4 inches and 6 parts; which added, make 80 feet 7 inches and 6 parts. Now whereas theſe tables meaſure no nearer than inches, the remaining parts, belonging the length and breadth, is yet wanting; in order to obtain which, obſerve the following rule: In the foregoing table of parts, (deſign'd and adapted for this purpoſe) ſeek for 9 parts, pertaining your breadth, on the head thereof; and in the ſame column, under that pointing downwards, till you come oppoſite 10 feet, (the length) in the left hand column, you will find 7 inches 6 parts;

and

and for the remainder of the length, viz. (9 inches) you will find 7 parts; which added, is 8 inches 1 part; then find 6 parts belonging the length, on the head of the table, and ſeek the breadth, 7 feet, on the left hand column; oppoſite to which, you will find 3 inches 6 parts; which, added to the above 8 inches 1 part, make 11 inches 7 parts—the meaſure of all the parts; this being added to the firſt meaſurement, viz. 80 feet, 7 inches, 6 parts, make 81 feet, 7 inches, 4 parts, the whole content of the ſaid meaſurement.

The proof.

	f.	i.	p	f.	t.	
Length	10	9	6			
Breadth			7	6	9	
	0	8	1	1	6	
	5	4	9	0		
	75	6	6			
feet	81	7	4	1	6	content req.

Note, The ſecond and third parts are inconſiderable.

Of MASONS WORK.

MASONS meaſure all their work by the foot, either ſuperficial or ſolid, and therefore I need give no example in this kind of work; for the rules before delivered, (together with the table of ſolid meaſure therein contained)

tained) are ſufficient to perform any thing that in Maſonry is required; however, ſhall give one example for practice.

EXAMPLE.

If a wall be 47 feet 6 inches long, 16 feet 3 inches high, and 2 feet 3 inches thick, how many ſolid feet are contained therein?

	f.	i.	p.	f.	
Length - - -	47	6			
Height - - -	16	3			
	290	0			} product by 16 feet
	47				
	11	10	6		ditto by 3 inches
Superficial content - -	771	10	6		
Multiplied by the thickneſs	2	3	0		
Product - - - - - -	192	11	7	6	by 3 inches
Ditto - - - - - - -	1543	9	0		by 2 feet
Solid content - - - -	1736	8	7	6	facit
	f.	i.	p.	f.	

Note, When your work requires bringing into ſolid yards, divide the number of feet by 27, the feet in a ſolid yard; obtain'd thus,

3 times 3 is 9, and 3 times 9 is 27;

3
3
9
3
27 feet.

Of

Of PAVIOURS WORK.

IF a pavement be 40 feet 6 inches long, and 16 feet 6 inches broad, I demand how many yards are contained therein?

thus, by the breadth divided,

	f.	i.		f.	i.	p.
Length - -	40	6	Ditto - - - - -	40	6	
Breadth in part	8		Remainder ditto	8	6	
Product by 8 f.	324	0		20	3	0
				324	0	
			product by 8 feet 6 inches	344	3	0
			product by 8 feet added - - - - - - -	324	0	0
			divided by - - -	9)668	3	0
			74 yards, 2 feet, 3 inches	74	2	3

facit.

EXAMPLE II.

There is a room, whose length is 21 feet 6 inches, and the breadth 17 feet 6 inches, which is to be paved with stone; each stone 18 inches square, I demand how many such stones will pave it?

	f.	i.		f.	i.	p.
Length - - -	21	6	Ditto - - - - -	21	6	0
Part of the breadth	8	0	Complement ditto	9	6	
Product by 8 feet	172	0		10	9	0
				193	6	
			Product by 9 feet 6 inches	204	3	0

added

added thus,

square of each stone							
	f.	i.					
	1	6					
	1	6		f.	i.	p.	
	0	9		204	3	0	
	1	6		172	0	0	
feet	2	3	area	376	3	0	content in sq. f.
	12			12			
inches	27		divided	)4515(167			stones as required.
				27			
				181			facit.
				162			
				195			
				189			
				6			

A TABLE,

Shewing the value of any number of feet, yards, yards ſquare, ſquare of 10 feet, merchandizing ware, &c. at any given price whatſoever, from 1 farthing to 10 pounds, the integer, to any quantity, from 1 to 300, by inſpection, (which, with the help of Addition only) to any greater price or quantity required.

The number of feet, yards, ſquares of 10 feet or yards, ells, pounds, cwts. &c.

1				2				3				4			
the price being															
£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.
0	0	0	¼	0	0	0	½	0	0	0	¾	0	0	1	
			½			0	1			0	1½			0	2
			¾			0	1	½			0	2	¼		0	3
		1				0	2			0	3			0	4
		2				0	4			0	6			0	8
		3				0	6			0	9			1	0
		4				0	8			1	0			1	4
		5				0	10			1	3			1	8
		6				1				1	6			2	0
		7				1	2			1	9			2	4
		8				1	4			2				2	8
		9				1	6			2	3			3	
		10				1	8			2	6			3	4
		11				1	10			2	9			3	8
	1					2				3				4	
	2					4				6				8	
	3					6				9				12	
	4					8				12				16	
	5					10				15			1	0	
	6					12				18			1	4	
	7					14			1	1			1	8	
	8					16			1	4			1	12	
	9					18			1	7			1	16	
	10			1	0				1	10			2	0	

Table

Table continued.

1				2				3				4			
the price being															
£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.
0	11	0	0	1	2			1	13			2	4		
	12			1	4			1	16			2	8		
	13			1	6			1	19			2	12		
	14			1	8			2	2			2	16		
	15			1	10			2	5			3	0		
	16			1	12			2	8			3	4		
	17			1	14			2	11			3	8		
	18			1	16			2	14			3	12		
	19			1	18			2	17			3	16		
1				2				3	0			4	0		
2				4				6	0			8	0		
3				6				9	0			12	0		
4				8				12	0			16	0		
5				10				15	0			20	0		
6				12				18	0			24	0		
7				14				21	0			28	0		
8				16				24	0			32	0		
9				18				27	0			36	0		
10				20				30	0			40	0		

5				6				7				8			
£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.
0	0	1	¼	0	0	1	½	0	0	1	¾	0	0	2	
	0	2	½		0	3			0	3	½		0	4	
	0	3	¾		0	4	½		0	5	¼		0	6	
	0	5			0	6	½		0	7			0	8	
	0	10			1	0			1	2			1	4	
	1	3			1	6			1	9			2	0	
	1	8			2	0			2	4			2	8	
	2	1			2	6			2	11			3	4	
	2	6			3	0			3	6			4	0	
	2	11			3	6			4	1			4	8	
	3	4			4	0			4	8			5	4	
	3	9			4	6			5	3			6	0	
	4	2			5	0			5	10			6	8	
	4	7			5	6			6	5			7	4	
	5				6	0			7	0			8	0	

Table continued.

5				6				7				8			
£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.
	10				12				14				16	0	
	15				18			1	1			1	4		
1	0			1	4			1	8			1	12		
1	5			1	10			1	15			2	0		
1	10			1	16			2	2			2	8		
1	15			2	2			2	9			2	16		
2	0			2	8			2	16			3	4		
2	5			2	14			3	3			3	12		
2	10			3	0			3	10			4	0		
2	15			3	6			3	17			4	8		
3	0			3	12			4	4			4	16		
3	5			3	18			4	11			5	4		
3	10			4	4			4	18			5	12		
3	15			4	10			5	5			6	0		
4	0			4	16			5	12			6	8		
4	5			5	2			5	19			6	16		
4	10			5	8			6	6			7	4		
4	15			5	14			6	13			7	12		
5	0			6				7	0			8	0		
10	0			12				14				16			
15	0			18				21				24			
20	0			24				28				32			
25	0			30				35				40			
30	0			36				42				48			
35	0			42				49				56			
40	0			48				56				64			
45	0			54				63				72			
50	0			60				70				80			

9				10				20				30			
£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.	£.	s.	d.	q.
0	0	2	¼	0	0	2	½	0	0	5				7	½
	0	4	½			5			0	10			1	3	
	0	6	¾			7	½		1	3			1	10	½
	0	9				10			1	8			2	6	
	1	6			1	8			3	4			5		

Table

Table continued.

9				10			20			30		
£.	s.	d.	q.	£.	s.	d.	£.	s.	d.	£.	s.	d.
	2	3			2	6		5			7	6
	3				3	4		6	8		10	
	3	9			4	2		8	4		12	6
	4	6			5	0		10			15	
	5	3			5	10		11	8		17	6
	6				6	8		13	4	1	0	0
	6	9			7	6		15		1	2	6
	7	6			8	4		16	8	1	5	
	8	3			9	2		18	4	1	7	6
	9				10		1	0		1	10	
	18			1	0		2			3		
1	7			1	10		3			4	10	
1	16			2			4			6		
2	5			2	10		5			7	10	
2	14			3			6			9		
3	3			3	10		7			10	10	
3	12			4			8			12		
4	1			4	10		9			13	10	
4	10			5			10			15		
4	19			5	10		11			16	10	
5	8			6			12			18		
5	17			6	10		13			19	10	
6	6			7			14			21		
6	15			7	10		15			22	10	
7	4			8			16			24		
7	13			8	10		17			25	10	
8	2			9			18			27		
8	11			9	10		19			28	10	
9	0			10			20			30		
18	0			20			40			60		
27	0			30			60			90		
36	0			40			80			120		
45	0			50			100			150		
54	0			60			120			180		
63	0			70			140			210		
72	0			80			160			240		
81	0			90			180			270		
90	0			100			200			300		

Table

Table continued.

40			50				100			200		
£.	s.	d.	£.	s.	d.		£.	s.	d.	£.	s.	d.
0	0	10		1	0	½		2	1		4	2
	1	8		2	1			4	2		8	4
	2	6		3	1	½		6	3		12	6
	3	4		4	2			8	4		16	8
	6	8		8	4			16	8		17	4
	10			12	6		1	5		1	10	
	13	4		16	8		1	13	4	3	6	8
	16	8	1	0	10		2	1	8	4	3	4
1	0		1	5	0		2	10	0	5	0	
1	3	4	1	9	2		2	18	4	5	16	8
1	6	8	1	13	4		3	6	8	6	13	4
1	10	0	1	17	6		3	15	0	7	10	0
1	13	4	2	1	8		4	3	4	8	6	8
1	16	8	2	5	10		4	11	8	9	3	4
2	0	0	2	1			5	0	0	10	0	
4			5				10			20		
6			7	10			15			30		
8			10				20			40		
10			12	10			25			50		
12			15				30			60		
14			17	10			35			70		
16			20				40			80		
18			22	10			45			90		
20			25				50			100		
22			27	10			55			110		
24			30				60			120		
26			32	10			65			130		
28			35				70			140		
30			37	10			75			150		
32			40				80			160		
34			42	10			85			170		
36			45				90			180		
38			47	10			95			190		
40			50				100			200		
80			100				200			400		
120			150				300			600		
160			200				400			800		
200			250				500			1000		
240			300				600			1200		
280			350				700			1400		
320			400				800			1600		
360			450				900			1800		
400			500				1000			2000		

Table concluded.

300			300			300		
£.	s.	d.	£.	s.	d.	£.	s.	d.
0	6	3	30			240		
0	12	6	45			255		
0	18	9	60			270		
1	5	0	75			285		
1	14	0	90			300		
2	15	0	105			600		
5	0	0	120			900		
6	5	0	135			1200		
7	10	0	150			1500		
8	15	0	160			1800		
10	0	0	180			2100		
11	5	0	195			2400		
12	10	0	210			2700		
13	15	0	225			3000		
15	0	0						

An explanation of the foregoing Tables.

THESE Tables, (for ſhewing the value of any thing, according to the given price of an integer) differ very little in the conſtruction thereof, to thoſe already treated of and explain'd. The number of what you deſire to know the value of, being ſpecified on the head of the table, thus; beginning with 2, 3, 4, &c. to 10; from thence, 20, 30, &c. to 300, and the price will always be found in the firſt column towards the left hand: but here obſerve, that the ſaid prices are continued no further, than from the beginning of the Table, page 106, to half way down the oppoſite page 107, notwithſtanding they do particularly refer to the whole ſucceeding columns of the table throughout, ſo that the

number required being found on the head of the ſaid table, and the price in the left hand column, the common meeting of the ſaid numbers give you the value thereof, both in pounds, ſhillings, pence, and farthings, in their ſeveral reſpective columns; only it may be neceſſary to obſerve, that when your exact number cannot be found at once on the head of the table, you muſt make up the deficiency, with adding two tables together; otherwiſe, by collecting ſuch table as is equal to half your required number, and double the value thereof; examples of which, you have here following, in compound Multiplication, which will (or at leaſt ſhould) exactly prove each other.

Multiplication of compound Quantities.

EXAMPLE I.

What coſt 8 rod of brick-work, at 12 s. 6 d. per rod?

s.	*d.*
12	6
	8

£. 5 0 0 facit.

Explanation of the Work.

Firſt, ſay 8 times 6 is 48 pence; ſet down 0, and carry 4, the ſhillings therein, ſaying, 8 times 12 is 96, and 4 carried, is 100 ſhillings, which is 5 pounds; therefore, ſet down 0 in the place of ſhillings, and 5 pounds in the place towards the left hand, which is the anſwer as required.

EXAMPLE II.

What is the value of 9 ſquares of Carpenters work, at 1 l. 5 s. 6 d. per ſquare?

£.	s.	d.
1	5	6
		9
£. 11	9	6 facit.

Here I ſay, 9 times 6 is 54 pence, which is 4 ſhillings and 6 pence; ſet down 6, and carry 4, ſaying, 9 times 5 is 45, and 4 carried, is 49 ſhillings, which is 2 pounds 9 ſhillings; ſet down 9 ſhillings, and carry 2 pounds, ſaying, 9 times 1 is 9, and 2 I carry, is 11 pounds, and the product is 11 l. 9 s. 6 d. the value required.

EXAMPLE III.

What coſt 48 foot of timber, at 1 s. 4 d. ½ per foot?

	£.	s.	d.	
	0	1	4	½
				6
	0	8	3	0
				8
facit	£. 3	6	0	0

N. B. The factors, or multipliers, are 6 and 8 (which being multiplied together, make 48, the quantity); therefore, multiplying firſt by 6, and then by 8, gives the anſwer.

In anſwering all queſtions of the beforementioned kind, take any two numbers, which, when multiplied together, will produce the quantity or number given, as in the laſt example, where 48 is given, the factors for which is 6 and 8, which, as aforeſaid, make (multiplied together) 48; therefore theſe factors, when found, being one of them multiplied by the given price, and the other, by that product, the laſt product will be the anſwer, as in the laſt example. In the firſt place, I multiply the price by 6, which gives me the price of 6 feet; then I multiply the price of 6 feet by 8, and it gives me the price of 48 feet, as required, and ſo of all the reſt.

EXAMPLE IV.

If 1 yard of any ſort of work, or goods, &c. coſt 2 s. 9 d. what is the value of 100 yards?

	£.	s.	d.	
	0	2	9	
			10	
for 10 yards	1	7	6	
			10	
for 100 yards	13	15	0	facit.

Note, The factors will be 10 and 10, which being multiplied together, make 100.

EXAMPLE V.

What will the charge of a painted room come to, which meaſures 144 yards, at 7 d. ½ per yard?

£.

£.	s.	d.		
0	0	7	½	
			12	
0	7	6	0	the price of 12 yards
			12	
4	10	0	0	the price of 144 yards.

First, I multiply the price of 1 yard by 12, which gives the price of 12; then I multiply that product by 12 again, which gives the price of 144 yards as required.

EXAMPLE VI.

What comes 72 squares of tiling to, at 1l. 7s. 6d. per square?

	£.	s.	d.	
	1	7	6	
			9	
	12	7	6	the price of 9
			8	
facit £.	99	0	0	the price of 72

Here I multiply the price of 1 square by 9, and the product is the price for 9; then I multiply that product by 8, and the product thereof is the price for 72 (for 9 times 8 make 72).

EXAMPLE VII.

What is the charge of 135 yards of paving, at 2s. 6d. ½ per yard.

£.	s.	d.		
0	2	6	½	
			12	
1	10	6	0	the price of 12 yards
			11	
16	15	6	0	the price of 132 yards
0	7	7	½	the price of 3 yards
£. 17	3	1	½	the price of 135 yards.

EXAMPLE VIII.

A Slater hath cover'd a roof, which meaſures 12 ſquares, at 1 l. 10 s. 6 d. ½ per ſquare, I demand the charge thereof?

£.	s.	d.		
1	10	6	½	
			4	
6	2	2	0	the price of 4 ſquares
			3	
ſacit £. 18	6	6	0	the price of 12 ditto

Or thus, by 12, at one operation

£.	s.	d.	
1	10	6	½
			12
£. 18	6	6	anſwer as above.

Exam-

EXAMPLE IX.

A Glazier hath glaz'd work, the dimenſions whereof, when ſquar'd and caſt up, amount to 300 feet, at 1 s. 6d. ¼ per foot, I demand the charge thereof?

£.	s.	d.		
0	1	6	¼	
			10	
0	15	5	0	the price of 10 feet
			10	
7	14	2	0	the price of 100 ditto
			3	
£. 23	2	6	0	the price of 300, as req.

EXAMPLE X.

Of MERCHANDIZE.

If 1 yard of velvet coſt 1 l. 4s. 6d. ½, what will 70 yards and ½ coſt?

1	4	6	½	
			10	
12	5	5	0	the price of 10 yards
			7	
85	17	11	0	ditto 70 yards
	12	3	¼	ditto ½ yard
£. 86	10	2	¼	anſwer for 70 ½ yards.

EXAM-

EXAMPLE XI.

What coſt 87 pounds of tea, at 10s. 6d. per lb?

	£.	s.	d.	
			6	
		10		
	5	5	0	the price of 10lb.
			8	
	42	0	0	ditto - - - 80lb.
	3	13	6	ditto - - - 7lb.
facit £.	45	13	6	the value of 87lb.

EXAMPLE XII.

If 1 gallon of rum coſt 8s. what will 1000 coſt at that rate?

	£.	s.	d.	
		8	0	
		10		
	4	0	0	price of 10
		10		
	40	0	0	ditto of 100
		10		
£.	400	0	0	ditto of 1000

If a hogſhead of tobacco coſt 3l. 8s. 4d. $\frac{1}{2}$, what will 700 coſt at that rate?

£.

£.	s.	d.		
	3	8	4	½
			10	
	34	3	9	0 price of 10
			10	
	341	17	6	0 ditto of 100
			7	
£.	2393	2	6	0 ditto of 700

This method of finding the value of any number of feet, yards, ſquares, pounds, gallons, hogſheads, or any other thing you deſire, is of great uſe, as the work is here perform'd in a ſhort and eaſy manner, and very often exceeds the method of practice, and will undoubtedly be of excellent uſe to all thoſe who buy and ſell by retail, and to every perſon almoſt, of whatſoever trade or buſineſs.

To exerciſe the laſt tables by thoſe examples.

EXAMPLE I.

Being to find the value of 8 rod of brick-work, at 12s. 6d. per rod.

Look on the head of the table for 8, then ſeek your price on the left hand column, viz. 12s. 6d. and you will find thus, for 12s. (in the column that hath 8 on the head thereof) 4l. 16s. 0d. and in the ſame column, a little above, oppoſite 6d. (the complement of the price) 4s. which, added to the above, make 5l. 0s. 0d. the price thereof;

thus,

			£.	s.	d.	
For	12 s.	per rod	4	16	0	
For		6 d. ditto	0	4	0	
For	12 s.	6 d. ditto	5	0	0	the proof.

This example may be ſufficient, where the exact number is always found on the head of the table; but, as I ſaid before, as it will not always hold out ſo, the following example will be neceſſary, in order to inſtruct the learner how to proceed, when he cannot find ſuch number as he would know the value of.

EXAMPLE XII.

Where the value of 1000 gallons of rum, at 8 s. per gallon, is required; this number not being to be found, I take the table 200, which having found 8 s. in the price column, I find, oppoſite thereto, in the common meeting with 200 column, 80 l. 0 s. 0 d. therefore this only being the value for 200, I want 5 times this number, for 5 times 200 make 1000; therefore proceed thus, if you can multiply.

for	200	£.	80	
	5		5	
for	1000	£.	400	the value thereof.

Or

Or thus, by Addition,

200	at 8 s.	per gallon,	is £.	80
200	ditto	ditto		80
200	ditto	ditto		80
200	ditto	ditto		80
200	ditto	ditto		80
1000	ditto	ditto	£.	400 proof.

Theſe examples will be ſufficient to inſtruct the learner how to find the value of any thing almoſt whatſoever required, either by the tables, or multiplication; therefore, ſhall leave the reſt of theſe examples for practice.

*** *Note*, That whereas, the great utility of this BOOK may perhaps induce ſeveral perſons to purchaſe it, who are not ſo perfectly acquainted with the uſe of figures as they could wiſh, or at leaſt able to divide the products of the ſeveral dimenſions by 9 (in order to obtain the ſquare yards, or 100 for the ſquares), therefore have, at the latter end of hereof, inſerted two Tables, which ſhew, by inſpection, the number of ſquare yards contain'd, from 18 to 1737, with inſtructions to any higher number required; alſo, how to find the ſquares of 10 feet, in any number whatſoever.

THE

Gentleman *and* Tradeſman's

COMPLEAT ASSISTANT, &c.

PART II.

CHAP. I.

Containing, Tables of SUPERFICIAL (or FLAT) MEASURE; as Board, Glaſs, Pavement, &c. ready caſt up, from 1 Foot to 50 in Length, and the ſame in Breadth (increaſing regularly 1 Inch at each Step); which, by the Help of Addition only, may be continued to any greater Length or Breadth.

Length of the Board, Glaſs, Pavement, &c. being

	f. i.	f. i.	f. i.
	1 1	1 2	1 3

breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	1 4	1 5	1 6
1 6	1 7	1 9	1 10
1 9	1 10	2	2 2
2	2 2	2 4	2 6
2 3	2 5	2 7	2 9
2 6	2 8	2 10	3 1
2 9	2 11	3 2	3 5
3	3 3	3 6	3 9
3 3	3 6	3 9	4
3 6	3 9	4 1	4 0
3 9	4	4 4	4 8
4	4 4	4 8	5
4 3	4 7	4 11	5 3
4 6	4 10	5 3	5 7
4 9	5 1	5 6	5 11
5	5 5	5 10	6 2
5 3	5 8	6 1	6 6
5 6	5 11	6 5	6 10
5 9	6 2	6 8	7 2
6	6 6	7	7 6
6 3	6 9	7 3	7 9
6 6	7	7 7	8 1
6 9	7 3	7 10	8 5
7	7 7	8 2	8 9
7 3	7 10	8 5	9 0
7 6	8 1	8 9	9 4
7 9	8 4	9	9 8
8	8 8	9 4	10
8 3	8 11	9 7	10 3
8 6	9 2	9 11	10 7
8 9	9 5	10 2	10 11
9 0	9 9	10 6	11 3
9 3	10	10 9	11 5
9 6	10 3	11 1	11 8
9 9	10 6	11 4	1 0
10 0	10 10	11 8	1 0 4
10 3	11 1	11 11	1 0 8
10 6	11 4	1 0 3	1 1
10 9	11 7	1 0 0	1 1 4

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 1 1	f. i. 1 2	f. i. 1 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
11 0	11 11	1 0 10	1 1 9
11 3	1 00 2	1 1 1	1 2 0
11 6	1 5 5	1 1 5	1 2 4
11 9	1 0 8	1 1 8	1 2 8

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 1 4	f. i. 1 5	f. i. 1 6
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	1 8	1 9	1 10
1 6	2	2 1	2 3
1 9	2 4	2 5	2 7
2	2 8	2 10	3
2 3	3	3 2	3 4
2 6	3 4	3 6	3 9
2 9	3 8	3 10	4 1
3	4	4 3	4 6
3 3	4 4	4 7	4 10
3 6	4 8	4 11	5 3
3 9	5	5 3	5 7
4	5 4	5 8	6
4 3	5 8	6	6 4
4 6	6	6 4	6 9
4 9	6 4	6 8	7 1
5	6 8	7 1	7 6
5 3	7	7 5	7 10
5 6	7 4	7 9	8 3
5 9	7 8	8 1	8 7
6	8	8 6	9
6 3	8 4	8 10	9 4
6 6	8 8	9 2	9 9
6 9	9	9 6	10 1
7	9 4	9 11	10 6

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 1 4			f. i. 1 5			f. i. 1 6		
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
	7	3		9	8		10	3		10	10
	7	6		10			10	7		11	3
	7	9		10	4		10	11		11	7
	8			10	8		11	4	1		
	8	3		11			11	8	1		4
	8	6		11	4	1			1		9
	8	9		11	8	1		4	1	1	1
	9		1			1		9	1	1	6
	9	3	1		4	1	1	1	1	1	10
	9	6	1		8	1	1	5	1	2	3
	9	9	1	1		1	1	9	1	2	7
	10		1	1	4	1	2	2	1	3	
	10	3	1	1	8	1	2	6	1	3	4
	10	6	1	2		1	2	10	1	3	9
	10	9	1	2	4	1	3	2	1	4	2
	11		1	2	8	1	3	7	1	4	6
	11	3	1	3		1	3	11	1	4	10
	11	6	1	3	4	1	4	3	1	5	3
	11	9	1	3	8	1	4	7	1	5	7
1			1	4		1	5		1	6	
1	3		1	8	0	1	9	3	1	10	6
1	6		2	0	0	2	1	6	2	3	0

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 1 7			f. i. 1 8			f. i. 1 9		
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
1	3			1	11		2	1		2	2
1	6			2	4		2	6		2	7
1	9			2	9		2	11		3	
2				3	2		3	4		3	6
2	3			3	6		3	9		3	11

Length

Length of the Board, Glafs, Pavement, &c. being

breadth in f.	i.	p.	f. 1 i. 7 Content f.	i.	p.	f. 1 i. 8 Content f.	i.	p.	f. 1 i. 9 Content f.	i.	p.
2	6			3	11		4	2		4	4
2	9			4	4		4	7		4	9
3				4	9		5			5	3
3	3			5	1		5	5		5	8
3	6			5	6		5	10		6	1
3	9			5	11		6	3		6	6
4				6	4		6	8		7	
4	3			6	8		7	1		7	5
4	6			7	1		7	6		7	10
4	9			7	6		7	11		8	4
5				7	11		8	4		8	9
5	3			8	3		8	9		9	2
5	6			8	8		9	2		9	7
5	9			9	1		9	7		10	
6				9	6		10			10	6
6	3			9	10		10	5		10	11
6	6			10	3		10	10		11	4
6	9			10	8	0	11	3		11	9
7				11	1	0	11	8	1		3
7	3			11	5	1	0	1	1		8
7	6			11	10	1	0	6	1	1	1
7	9		1	00	3	1	0	11	1	1	6
8			1	0	8	1	1	4	1	2	11
8	3		1	1		1	1	9	1	2	5
8	6		1	1	5	1	2	2	1	2	10
8	9		1	1	10	1	2	7	1	3	3
9			1	2	3	1	3	6	1	3	9
9	3		1	2	7	1	3	5	1	4	2
9	6		1	3		1	3	10	1	4	7
9	9		1	3	5	1	4	3	1	5	
10			1	3	10	1	4	8	1	5	6
10	3		1	4	2	1	5	1	1	5	11
10	6		1	4	7	1	5	6	1	6	4
10	9		1	5		1	5	11	1	6	9
11			1	5	5	1	6	4	1	7	3
11	3		1	5	9	1	6	9	1	7	8
11	6		1	6	2	1	7	2	1	8	1
11	9		1	6	7	1	7	7	1	8	6
1			1	7	0	1	8	0	1	9	0

Length

Length of the Board, Glaſs, Pavement, &c. being

	f.	i.		f.	i.		f.		
	1	10		1	11		2		
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
1	3			2	3		2	4		2	6
1	6			2	9		2	10		3	
1	9			3	2		3	4		3	6
2				3	8		3	10		4	
2	3			4	1		4	3		4	6
2	6			4	7		4	9		5	
2	9			5			5	3		5	6
3				5	6		5	9		6	
3	3			5	11		6	2		6	6
3	6			6	5		6	8		7	
3	9			6	11		7	2		7	6
4				7	4		7	8		8	
4	3			7	10		8	1		8	6
4	6			8	3		8	7		9	
4	9			8	9		9	1		9	6
5				9	2		9	7		10	
5	3			9	8		10			10	6
5	6			10	1		10	6		11	
5	9			10	7		11			11	6
6				11			11	6	1		
6	3			11	6		11	11	1		6
6	6			11	11	1		5	1	1	
6	9		1		5	1		11	1	1	6
7			1		10	1	1	5	1	2	
7	3		1	1	4	1	1	10	1	2	6
7	6		1	1	9	1	2	4	1	3	
7	9		1	2	3	1	2	10	1	3	6
8			1	2	8	1	3	4	1	4	
8	3		1	3	2	1	3	9	1	4	6
8	6		1	3	7	1	4	3	1	5	
8	9		1	4	1	1	4	9	1	5	6
9			1	4	6	1	5	3	1	6	
9	3		1	4	11	1	5	8	1	6	6
9	6		1	5	4	1	6	2	1	7	
9	9		1	5	10	1	6	8	1	7	6
10			1	6	4	1	7	2	1	8	
10	3		1	6	9	1	7	7	1	8	6
10	6		1	7	3	1	8	1	1	9	

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 1 10		f. i. 1 11		f. 2	
breadth in f. i.	p.	Content f. i.	p.	Content f. i.	p.	Content f. i.	p.
10	9	1 7	8	1 8	7	1 9	6
11		1 8	2	1 9	1	1 10	
11	3	1 8	7	1 9	6	1 10	6
11	6	1 9	1	1 10		1 11	
11	9	1 9	6	1 10	6	1 11	6
1		1 10		1 11		2	

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 2 1		f. i. 2 2		f. i. 2 3	
breadth in f. i.	p.	Content f. i.	p.	Content f. i.	p.	Content f. i.	p.
1	3	2	7	2	8	2	9
1	6	3	1	3	3	3	4
1	9	3	7	3	9	3	11
2		4	2	4	4	4	6
2	3	4	8	4	10	5	
2	6	5	2	5	5	5	7
2	9	5	8	5	11	6	2
3		6	3	6	6	6	9
3	3	6	9	7	0	7	3
3	6	7	3	7	7	7	10
3	9	7	9	8	1	8	5
4		8	4	8	8	9	
4	3	8	10	9	2	9	6
4	6	9	4	9	9	10	1
4	9	9	10	10	3	10	8
5		10	5	10	10	11	3
5	3	10	11	11	4	11	9
5	6	11	5	11	11	1	4
5	9	11	11	1	5	1	11
6		1	6	1 1		1 1	6
6	3	1 1		1 1	6	1 2	
6	6	1 1	6	1 2	1	1 2	7

Length

Length of the Board, Glafs, Pavement, &c. being

	f. i. 2 1	f. i. 2 2	f. i. 2 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
6 9	1 2	1 2 7	1 3 2
7	1 2 7	1 3 2	1 3 9
7 3	1 3 1	1 3 8	1 4 3
7 6	1 3 7	1 4 3	1 4 10
7 9	1 4 1	1 4 9	1 5 5
8	1 4 8	1 5 4	1 6
8 3	1 5 2	1 5 10	1 6 6
8 6	1 5 8	1 6 5	1 7 1
8 9	1 6 2	1 6 11	1 7 8
9	1 6 9	1 7 6	1 8 3
9 3	1 7 3	1 8 0	1 8 9
9 6	1 7 9	1 8 7	1 9 4
9 9	1 8 3	1 9 1	1 9 11
10	1 8 10	1 9 8	1 10 6
10 3	1 9 4	1 10 2	1 11
10 6	1 9 10	1 10 9	1 11 7
10 9	1 10 5	1 11 3	2 2
11	1 10 11	1 11 10	2 9
11 3	1 11 5	2 4	2 1 3
11 6	1 11 11	2 11 11	2 1 10
11 9	2 6	2 1 5	2 2 5
1	2 1	2 2	2 3

Length of the Board, Glafs, Pavement, &c. being

	f. i. 2 4	f. i. 2 5	f. i. 2 6
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	2 11	3	3 1
1 6	3 6	3 7	3 9
1 9	4 1	4 2	4 4
2	4 8	4 10	5
2 3	5 3	5 5	5 7
2 6	5 10	6	6 3

Length of the Board, Glafs, Pavement, &c. being

	f. i. 2 4			f. i. 2 5			f. i. 2 6		
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
	2	9		6	5		6	7		6	10
	3			7			7	3		7	6
	3	3		7	7		7	10		8	1
	3	6		8	2		8	5		8	9
	3	9		8	9		9			9	4
	4			9	4		9	8		10	
	4	3		9	11		10	3		10	7
	4	6		10	6		10	10		11	3
	4	9		11	1		11	5		11	10
	5			11	8	1		1	1		6
	5	3	1		3	1		8	1	1	1
	5	6	1		10	1	1	3	1	1	9
	5	9	1	1	5	1	1	10	1	2	4
	6		1	2		1	2	6	1	3	
	6	3	1	2	7	1	3	1	1	3	7
	6	6	1	3	2	1	3	8	1	4	3
	6	9	1	3	9	1	4	3	1	4	10
	7		1	4	4	1	4	11	1	5	6
	7	3	1	4	11	1	5	6	1	6	1
	7	6	1	5	6	1	6	1	1	6	9
	7	9	1	6	1	1	6	8	1	7	4
	8		1	6	8	1	7	4	1	8	
	8	3	1	7	3	1	7	11	1	8	7
	8	6	1	7	10	1	8	6	1	9	3
	8	9	1	8	5	1	9	1	1	9	10
	9		1	9		1	9	9	1	10	6
	9	3	1	9	7	1	10	4	1	11	1
	9	6	1	10	2	1	10	11	1	11	9
	9	9	1	10	9	1	11	6	2		4
	10		1	11	4	2		2	2	1	4
	10	3	1	11	11	2		9	2	1	7
	10	6	2		6	2	1	4	2	2	3
	10	9	2	1	1	2	2		2	2	10
	11		2	1	8	2	2	7	2	3	6
	11	3	2	2	3	2	3	2	2	4	1
	11	6	2	2	10	2	3	9	2	4	9
	11	9	2	3	5	2	4	4	2	5	4
1			2	4		2	5		2	6	
2			4	8		4	10		5		

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 2 7	f. i. 2 8	f. i 2 9

breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	3 2	3 4	3 5
1 6	3 10	4	4 1
1 9	4 6	4 8	4 9
2	5 2	5 4	5 6
2 3	5 9	6	6 2
2 6	6 5	6 8	6 10
2 9	7 1	7 4	7 6
3	7 9	8	8 3
3 3	8 4	8 8	8 11
3 6	9	9 4	9 7
3 9	9 8	10	10 3
4	10 4	10 8	11
4 3	10 11	11 4	11 8
4 6	11 7	1	1 4
4 9	1 3	1 8	1 1
5	1 11	1 1 4	1 1 9
5 3	1 1 6	1 2	1 2 5
5 6	1 2 2	1 2 8	1 3 1
5 9	1 2 10	1 3 4	1 3 9
6	1 3 6	1 4	1 4 6
6 3	1 4 1	1 4 8	1 5 2
6 6	1 4 9	1 5 4	1 5 10
6 9	1 5 5	1 6	1 6 6
7	1 6 1	1 6 8	1 7 3
7 3	1 6 8	1 7 4	1 7 11
7 6	1 7 4	1 8	1 8 7
7 9	1 8	1 8 8	1 9 3
8	1 8 8	1 9 4	1 10 11
8 3	1 9 3	1 10	1 10 8
8 6	1 9 11	1 10 8	1 11 4
8 9	1 10 7	1 11 4	2
9	1 11 3	2	2 9
9 3	1 11 10	2 8	2 1 5
9 6	2 6	2 1 4	2 2 1
9 9	2 1 2	2 2	2 2 9
10	2 1 10	2 2 8	2 3 6
10 3	2 2 5	2 3 4	2 4 2
10 6	2 3 1	2 4	2 4 10
10 9	2 3 9	2 4 8	2 5 6

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 2 7	f. i. 2 8	f. i. 2 9
breadth in f. i. p.	Content f. i. p.	Contens f. i. p.	Content f. i. p.
11	2 4 5	2 5 4	2 6 3
11 3	2 5	2 6	2 6 11
11 6	2 5 8	2 6 8	2 7 7
11 9	2 6 4	2 7 4	2 8 3
1	2 7	2 8	2 9
2	5 2	5 4	5 6

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 2 10	f. i. 2 11	f. i. 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	3 6	3 7	3 9
1 6	4 3	4 4	4 6
1 9	4 11	5 1	5 3
2	5 8	5 10	6
2 3	6 5	6 6	6 9
2 6	7 2	7 3	7 6
2 9	7 10	8	8 3
3	8 6	8 9	9
3 3	9 2	9 6	9 9
3 6	9 11	10 2	10 6
3 9	10 7	10 11	11 3
4	11 4	11 8	1
4 3	1 0	1 5	1 9
4 6	1 9	1 1 1	1 1 6
4 9	1 1 5	1 1 10	1 2 3
5	1 2 -	1 2 7	1 3
5 3	1 2 10	1 3 4	1 3 9
5 6	1 3 7	1 4	1 4 6
5 9	1 4 3	1 4 9	1 5 3
6	1 5	1 5 6	1 6
6 3	1 5 8	1 6 3	1 6 9

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 2 10	f. i. 2 11	f. 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
6 6	1 6 5	1 6 11	1 7 6
6 9	1 7 1	1 7 8	1 8 3
7	1 7 10	1 8 5	1 9
7 3	1 8 6	1 9 1	1 9 9
7 6	1 9 3	1 9 10	1 10 6
7 9	1 9 11	1 10 7	1 11 3
8	1 10 8	1 11 4	2 0
8 3	1 11 4	2	2 9
8 6	2 1	2 9	2 1 6
8 9	2 9	2 1 6	2 2 3
9	2 1 6	2 2 3	2 3
9 3	2 2 2	2 2 11	2 3 9
9 6	2 2 11	2 3 8	2 4 6
9 9	2 3 7	2 4 5	2 5 3
10	2 4 4	2 5 2	2 6
10 3	2 5	2 5 10	2 6 9
10 6	2 5 9	2 6 7	2 7 6
10 9	2 6 5	2 7 4	2 8 3
11	2 7 2	2 8 1	2 9
11 3	2 7 10	2 8 9	2 9 9
11 6	2 8 7	2 9 6	2 10 6
11 9	2 9 3	2 10 3	2 11 3
1	2 10 0	2 11	3
2	5 8 0	5 10	6
3	8 6 0	8 9	9

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 3 1	f. i. 3 2	f. i. 3 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	3 10	3 11	4
1 6	4 7	4 9	4 10
1 9	5 4	5 7	5 8

Length

Length of the Board, Glafs, Pavement, &c. being

	f. 3	i. 1		f. 3	i. 2		f. 3	i. 3	
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
2				6	2		6	4		6	6
2	3			6	11		7	1		7	3
2	6			7	8		7	11		8	1
2	9			8	5		8	8		8	11
3				9	3		9	6		9	9
3	3			10			10	3		10	6
3	6			10	9		11			11	4
3	9			11	6		11	10	1		2
4			1		4	1		8	1	1	
4	3		1	1	1	1	1	5	1	1	9
4	6		1	1	10	1	2	3	1	2	7
4	9		1	2	7	1	3		1	3	5
5			1	3	5	1	3	10	1	4	3
5	3		1	4	2	1	4	7	1	5	
5	6		1	4	11	1	5	5	1	5	10
5	9		1	5	8	1	6	2	1	6	8
6			1	6	6	1	7		1	7	6
6	3		1	7	3	1	7	9	1	8	3
6	6		1	8		1	8	7	1	9	1
6	9		1	8	9	1	9	4	1	9	11
7			1	9	7	1	10	2	1	10	9
7	3		1	10	4	1	10	11	1	11	6
7	6		1	11	2	1	11	9	2		4
7	9		1	11	11	2		6	2	1	2
8			2		8	2	1	4	2	2	
8	3		2	1	5	2	2	1	2	2	9
8	6		2	2	3	2	2	11	2	3	7
8	9		2	3		2	3	8	2	4	5
9			2	3	9	2	4	6	2	5	3
9	3		2	4	6	2	5	3	2	6	
9	6		2	5	3	2	6	1	2	6	10
9	9		2	6	0	2	6	10	2	7	8
10			2	6	10	2	7	8	2	8	6
10	3		2	7	7	2	8	5	2	9	3
10	6		2	8	4	2	9	3	2	10	1
10	9		2	9	1	2	10		2	10	11
11			2	9	11	2	10	10	2	11	9
11	3		2	10	8	2	11	7	3		6
11	6		2	11	5	3		5	3	1	4

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 3 1		f. i. 3 2		f. i. 3 3	
breadth in f. i. p.	Content f. i. p.		Content f. i. p.		Content f. i. p.	
11 9	3	2	3 1	2	3 2	2
1	3 1		3 2		3 3	
2	6 2		6 4		6 6	0
3	9 3		9 6		9 9	

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 3 4		f. i. 3 5		f. i. 3 6	
breadth in f. i. p.	Content f. i. p.		Content f. i. p.		Content f. i. p.	
1 3	4	2	4	3	4	4
1 6	5	0	5	1	5	3
1 9	5	10	5	11	6	1
2	6	8	6	10	7	0
2 3	7	6	7	8	7	10
2 6	8	4	8	6	8	9
2 9	9	2	9	4	9	7
3	10		10	3	10	6
3 3	10	10	11	1	11	4
3 6	11	8	11	11	1	3
3 9	1	6	1	9	1 1	1
4	1 1	4	1 1	8	1 2	
4 3	1 2	2	1 2	6	1 2	10
4 6	1 3		1 3	4	1 3	9
4 9	1 3	10	1 4	2	1 4	7
5	1 4	8	1 5	1	1 5	6
5 3	1 5	6	1 5	11	1 6	4
5 6	1 6	4	1 6	9	1 7	3
5 9	1 7	2	1 7	7	1 8	1
6	1 8		1 8	6	1 9	
6 3	1 8	10	1 9	4	1 9	10
6 6	1 9	8	1 10	2	1 10	9
6 9	1 10	6	1 11		1 11	7

Length

Length of the Board, Glaſs, Pavement, &c. being

	f.	i.		f.	i.		f.	i.	
	3	4		3	5		3	6	
breadth in f. i. p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
7	1	11	4	1	11	11	2		6
7 3	2		2	2		9	2	1	4
7 6	2	1		2	1	7	2	2	3
7 9	2	1	10	2	2	5	2	3	1
8	2	2	8	2	3	4	2	4	
8 3	2	3	6	2	4	2	2	4	10
8 6	2	4	4	2	5		2	5	9
8 9	2	5	2	2	5	10	2	6	7
9	2	6		2	6	9	2	7	6
9 3	2	6	10	2	7	7	2	8	4
9 6	2	7	8	2	8	5	2	9	3
9 9	2	8	6	2	9	3	2	10	1
10	2	9	4	2	10	2	2	11	
10 3	2	10	2	2	11		2	11	10
10 6	2	11		2	11	10	3		9
10 9	2	11	10	3		8	3	1	7
11	3		8	3	1	7	3	2	6
11 3	3	1	6	3	2	5	3	3	4
11 6	3	2	4	3	3	3	3	4	3
11 9	3	3	2	3	4	1	3	5	1
1	3	4		3	5		3	6	
2	6	8		6	10		7		
3	10			10	3		10	6	

Length of the Board, Glaſs, Pavement, &c. being

	f.	i.		f.	i.		f.	i.	
	3	7		3	8		3	9	
breadth in f. i. p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
1 3		4	5		4	7		4	8
1 6		5	4		5	6		5	7
1 9		6	3		6	5		6	6
2		7	2		7	4		7	6
2 3		8			8	3		8	5
2 6		8	11		9	2		9	4

Length

Length of the Board, Glass, Pavement, &c. being

	f.	i.
	3	7

	f.	i.
	3	8

	f.	i.
	3	9

breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
	2	9		9	10		10	1		10	3
	3			10	9		11			11	3
	3	3		11	7		11	11	1		2
	3	6	1		6	1		10	1	1	1
	3	9	1	1	5	1	1	9	1	2	
	4		1	2	4	1	2	8	1	3	
	4	3	1	3	2	1	3	7	1	3	11
	4	6	1	4	1	1	4	6	1	4	10
	4	9	1	5		1	5	5	1	5	9
	5		1	5	11	1	6	4	1	6	9
	5	3	1	6	9	1	7	3	1	7	8
	5	6	1	7	8	1	8	2	1	8	7
	5	9	1	8	7	1	9	1	1	9	6
	6		1	9	6	1	10		1	10	6
	6	3	1	10	4	1	10	11	1	11	5
	6	6	1	11	3	1	11	10	2		4
	6	9	2		2	2		9	2	1	3
	7		2	1	1	2	1	8	2	2	3
	7	3	2	1	11	2	2	7	2	3	2
	7	6	2	2	10	2	3	6	2	4	1
	7	9	2	3	9	2	4	5	2	5	
	8		2	4	8	2	5	4	2	6	
	8	3	2	5	7	2	6	3	2	6	11
	8	6	2	6	6	2	7	2	2	7	10
	8	9	2	7	4	2	8	1	2	8	9
	9		2	8	3	2	9		2	9	9
	9	3	2	9	2	2	9	11	2	10	8
	9	6	2	10	1	2	10	10	2	11	7
	9	9	2	10	11	2	11	9	3		6
	10		2	11	10	3		8	3	1	6
	10	3	3		9	3	1	7	3	2	5
	10	6	3	1	8	3	2	6	3	3	4
	10	9	3	2	6	3	3	5	3	4	3
	11		3	3	5	3	4	4	3	5	3
	11	3	3	4	4	3	5	3	3	6	2
	11	6	3	5	3	3	6	2	3	7	2
	11	9	3	6	1	3	7	1	3	8	1
1			3	7		3	8		3	9	
2			7	2		7	4		7	6	
3			10	9		11			11	3	

Length of the Board, Glass, Pavement, &c. being

	f.	i.		f.	i.		f.		
	3	10		3	11		4		
breadth in			Content			breadth in			Content
f.	i.	p.	f.	i.	p.	f.	i.	p.	f.	i.	p.
1	3			4	9		4	10		5	
1	6			5	9		5	10		6	
1	9			6	8		6	10		7	
2				7	8		7	10		8	
2	3			8	7		8	9		9	
2	6			9	7		9	9		10	
2	9			10	6		10	9		11	
3				11	6		11	9	1		
3	3		1		5	1		8	1	1	
3	6		1	1	5	1	1	8	1	2	
3	9		1	2	4	1	2	8	1	3	
4			1	3	4	1	3	8	1	4	
4	3		1	4	3	1	4	7	1	5	
4	6		1	5	3	1	5	7	1	6	
4	9		1	6	2	1	6	7	1	7	
5			1	7	2	1	7	7	1	8	
5	3		1	8	1	1	8	6	1	9	
5	6		1	9	1	1	9	6	1	10	
5	9		1	10		1	10	6	1	11	
6			1	11		1	11	6	2		
6	3		1	11	11	2	0	5	2	1	
6	6		2		11	2	1	5	2	2	
6	9		2	1	11	2	2	5	2	3	
7			2	2	10	2	3	5	2	4	
7	3		2	3	10	2	4	4	2	5	
7	6		2	4	9	2	5	4	2	6	
7	9		2	5	9	2	6	4	2	7	
8			2	6	8	2	7	4	2	8	
8	3		2	7	8	2	8	3	2	9	
8	6		2	8	7	2	9	3	2	10	
8	9		2	9	7	2	10	3	2	11	
9			2	10	6	2	11	3	3		
9	3		2	11	6	3		2	3	1	
9	6		3		5	3	1	2	3	2	
9	9		3	1	5	3	2	2	3	3	
10			3	2	4	3	3	2	3	4	
10	3		3	3	4	3	4	1	3	5	
10	6		3	4	3	3	5	1	3	6	

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 3 10	f. i. 3 11	f. 4
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
10 9	3 5 3	3 6 1	3 7
11	3 6 2	3 7 1	3 8
11 3	3 7 2	3 8	3 9
11 6	3 8 1	3 9	3 10
11 9	3 9 1	3 10	3 11
1	3 10	3 11	4
2	7 8	7 10	8
3	11 6	11 9	12
4	15 4	15 8	16

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 4 1	f. i. 4 2	f. i. 4 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1 3	5 1	5 2	5 3
1 6	6 1	6 3	6 4
1 9	7 1	7 3	7 5
2	8 2	8 4	8 6
2 3	9 2	9 4	9 6
2 6	10 2	10 5	10 7
2 9	11 2	11 5	11 8
3	1 3	1 6	1 9
3 3	1 1 3	1 1 6	1 1 9
3 6	1 2 3	1 2 7	1 2 10
3 9	1 3 3	1 3 7	1 3 11
4	1 4 4	1 4 8	1 5
4 3	1 5 4	1 5 8	1 6
4 6	1 6 4	1 6 9	1 7 1
4 9	1 7 4	1 7 9	1 8 3
5	1 8 5	1 8 10	1 9 3
5 3	1 9 5	1 9 10	1 10 3
5 6	1 10 5	1 10 11	1 11 4

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 4 1	f. i. 4 2	f. i. 4 3
breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
5 9	1 11 5	1 11 11	2 5
6	2 6	2 1	2 1 6
6 3	2 1 6	2 2	2 2 6
6 6	2 2 6	2 3 1	2 3 7
6 9	2 3 6	2 4 1	2 4 8
7	2 4 7	2 5 2	2 5 9
7 3	2 5 7	2 6 2	2 6 9
7 6	2 6 7	2 7 3	2 7 10
7 9	2 7 7	2 8 3	2 8 11
8	2 8 8	2 9 4	2 10
8 3	2 9 8	2 10 4	2 11
8 6	2 10 8	2 11 5	3 1 1
8 9	2 11 8	3 5	3 1 2
9	3 9	3 1 6	3 2 3
9 3	3 1 9	3 2 6	3 3 3
9 6	3 2 9	3 3 7	3 4 4
9 9	3 3 9	3 4 7	3 5 5
10	3 4 10	3 5 8	3 6 6
10 3	3 5 10	3 6 8	3 7 6
10 6	3 6 10	3 7 9	3 8 7
10 9	3 7 10	3 8 9	3 9 8
11	3 8 11	3 9 10	3 10 9
11 3	3 9 11	3 10 10	3 11 9
11 6	3 10 11	3 11 11	4 10
11 9	3 11 11	4 11	4 1 11
1	4 1	4 2	4 3 3
2	8 2	8 4	8 6
3	12 3	12 6	12 9
4	16 4	16 8	17

Length

Length of the Board, Glaſs, Pavement, &c. being

	f.	i.		f.	i.		f.	i.	
	4	4		4	5		4	6	
Breadth in f. i. p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
1 3		5	5		5	6		5	7
1 6		6	6		6	7		6	9
1 9		7	7		7	8		7	10
2		8	8		8	10		9	
2 3		9	9		9	11		10	1
2 6		10	10		11			11	3
2 9		11	11	1		1	1		4
3	1	1		1	1	3	1	1	6
3 3	1	2	1	1	2	4	1	2	7
3 6	1	3	2	1	3	5	1	3	9
3 9	1	4	3	1	4	6	1	4	10
4	1	5	4	1	5	8	1	6	
4 3	1	6	5	1	6	9	1	7	1
4 6	1	7	6	1	7	10	1	8	3
4 9	1	8	7	1	8	11	1	9	4
5	1	9	8	1	10	1	1	10	6
5 3	1	10	9	1	11	2	1	11	7
5 6	1	11	10	2		3	2		9
5 9	2		11	2	1	4	2	1	10
6	2	2		2	2	6	2	3	0
6 3	2	3	1	2	3	7	2	4	1
6 6	2	4	2	2	4	8	2	5	3
6 9	2	5	3	2	5	9	2	6	4
7	2	6	4	2	6	11	2	7	6
7 3	2	7	5	2	8		2	8	7
7 6	2	8	6	2	9	1	2	9	9
7 9	2	9	7	2	10	2	2	10	10
8	2	10	8	2	11	4	3		
8 3	2	11	9	3		5	3	1	1
8 6	3		10	3	1	6	3	2	3
8 9	3	1	11	3	2	7	3	3	4
9	3	3		3	3	9	3	4	6
9 3	3	4	1	3	4	10	3	5	7
9 6	3	5	2	3	5	11	3	6	9
9 9	3	6	3	3	7		3	7	10
10	3	7	4	3	8	2	3	9	
10 3	3	8	5	3	9	3	3	10	1
10 6	3	9	6	3	10	4	3	11	3
10 9	3	10	7	3	11	6	4		4

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 4 4			f. i. 4 5			f. i. 4 6		
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
	11		3	11	8	4		7	4	1	6
	11	3	4		9	4	1	8	4	2	7
	11	6	4	1	10	4	2	9	4	3	9
	11	9	4	2	11	4	3	11	4	4	11
1			4	4		4	5		4	6	
2			8	8		8	10		9		
3			13			13	3		13	6	
4			17	4		17	8		18		

Length of the Board, Glaſs, Pavement, &c. being

	f. i. 4 7			f. i. 4 8			f. i. 4 9		
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
1	3			5	8		5	10		5	11
1	6			6	10		7			7	1
1	9			8			8	2		8	3
2				9	2		9	4		9	6
2	3			10	3		10	6		10	8
2	6			11	5		11	8		11	10
2	9		1		7	1		10	1	1	
3			1	1	9	1	2		1	2	3
3	3		1	2	10	1	3	2	1	3	5
3	6		1	4		1	4	4	1	4	7
3	9		1	5	2	1	5	6	1	5	9
4			1	6	4	1	6	8	1	7	
4	3		1	7	5	1	7	10	1	8	2
4	6		1	8	7	1	9		1	9	4
4	9		1	9	9	1	10	2	1	10	6
5			1	10	11	1	11	4	1	11	9
5	3		2	0	0	2		6	2		11
5	6		2	1	2	2	1	8	2	2	1
5	9		2	2	4	2	2	10	2	3	3
6			2	3	6	2	4		2	4	6

Length

Length of the Board, Glaſs, Pavement, &c. being

	f.	i.		f.	i.		f.	i	
	4	7		4	8		4	9	
breadth in f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
6	3		2	4	7	2	5	2	2	5	8
6	6		2	5	9	2	6	4	2	6	10
6	9		2	6	11	2	7	6	2	8	
7			2	8	1	2	8	8	2	9	3
7	3		2	9	3	2	9	10	2	10	5
7	6		2	10	4	2	11		2	11	7
7	9		2	11	6	3		2	3		9
8			3		8	3	1	4	3	2	
8	3		3	1	9	3	2	6	3	3	2
8	6		3	2	11	3	3	8	3	4	4
8	9		3	4	1	3	4	10	3	5	6
9			3	5	3	3	6		3	6	9
9	3		3	6	4	3	7	2	3	7	11
9	6		3	7	6	3	8	4	3	9	1
9	9		3	8	8	3	9	6	3	10	3
10			3	9	10	3	10	8	3	11	6
10	3		3	10	11	3	11	10	4		8
10	6		4		1	4	1		4	1	10
10	9		4	1	3	4	2	2	4	3	
11			4	2	5	4	3	4	4	4	3
11	3		4	3	6	4	4	6	4	5	5
11	6		4	4	8	4	5	8	4	6	7
11	9		4	5	10	4	6	10	4	7	9
1			4	7		4	8		4	9	
2			9	2		9	4		9	6	
3			13	9		14	0		14	3	
4			18	4		18	8		19		

Length of the Board, Glaſs, Pavement, &c. being

	f.	i.		f.	i.		f.	
	4	10		4	11		5	
breadth in f.	i.	p.	Content f.	i.	p.	breadth in f.	i.	p.	Content f.	i.	p.
1	3		6			6	1		6	3	
1	6		7	3		7	4		7	6	
1	9		8	5		8	7		8	9	

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i.	f. i.	f.
	4 10	4 11	5

breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	9 8	9 10	10
2 3	10 10	11	11 3
2 6	1 1	1 3	1 6
2 9	1 1 3	1 1 6	1 1 9
3	1 2 6	1 2 9	1 3
3 3	1 3 8	1 3 11	1 4 3
3 6	1 4 11	1 5 2	1 5 6
3 9	1 6 1	1 6 5	1 6 9
4	1 7 4	1 7 8	1 8
4 3	1 8 6	1 8 10	1 9 3
4 6	1 9 9	1 10 1	1 10 6
4 9	1 10 11	1 11 4	1 11 9
5	2 2	2 7	2 1
5 3	2 1 4	2 1 9	2 2 3
5 6	2 2 7	2 3	2 3 6
5 9	2 3 9	2 4 3	2 4 9
6	2 5	2 5 6	2 6
6 3	2 6 2	2 6 8	2 7 3
6 6	2 7 5	2 7 11	2 8 6
6 9	2 8 7	2 9 2	2 9 9
7	2 9 10	2 10 5	2 11
7 3	2 11	2 11 7	3 3
7 6	3 3	3 10	3 1 6
7 9	3 1 5	3 2 1	3 2 9
8	3 2 8	3 3 4	3 4
8 3	3 3 10	3 4 6	3 5 3
8 6	3 5 1	3 5 9	3 6 6
8 9	3 6 3	3 7	3 7 9
9	3 7 6	3 8 3	3 9
9 3	3 8 8	3 9 5	3 10 3
9 6	3 9 11	3 10 8	3 11 6
9 9	3 11 1	3 11 11	4 9
10	4 4	4 1 2	4 2
10 3	4 1 6	4 2 4	4 3 3
10 6	4 2 9	4 3 7	4 4 6
10 9	4 3 11	4 4 10	4 5 9
11	4 5 2	4 6 1	4 7
11 3	4 6 4	4 7 3	4 8 3
11 6	4 7 7	4 8 6	4 9 6
11 9	4 8 9	4 9 9	4 10 9

Length

Length of the Board, Glaſs, Pavement, &c. being

	f. i.	f. i.	f.
	4 10	4 11	5

breadth in f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1	4 10	4 11	5
2	9 8	9 10	10
3	14 6	14 9	15
4	19 4	19 8	20
5	24 2	24 7	25

*** The reader is here to obſerve, that I have calculated the former part of theſe tables ſo far, to increaſe only a quarter of an inch at each ſtep in the breadth, which will be found very convenient for meaſuring of glaſs, and the like, being more particular in taking their dimenſions, than what ſeveral other branches commonly require.

CHAP. II.

TABLES continued.

Length of the Measurement being

f. i.	f. i.	f. i.	f. i.
5 1	5 2	5 3	5 4

brd. in f. i.	Content f. i. p.	Content f. i. p.	brd. in f. i.	Content f. i. p.	Content f. i. p.
2	10 2	10 4	2	10 6	10 8
3	1 3 3	1 3 6	3	1 3 9	1 4
4	1 8 4	1 8 8	4	1 9	1 9 4
5	2 1 5	2 1 10	5	2 2 3	2 2 8
6	2 6 6	2 7 0	6	2 7 6	2 8
7	2 11 7	3 0 2	7	3 9	3 1 4
8	3 4 8	3 5 4	8	3 6	3 6 8
9	3 9 9	3 10 6	9	3 11 3	4
10	4 2 10	4 3 8	10	4 4 6	4 5 4
11	4 7 11	4 8 10	11	4 9 9	4 10 8
1	5 1	5 2	1	5 3	5 4
2	10 2	10 4	2	10 6	10 8
3	15 3	15 6	3	15 9	16
4	20 4	20 8	4	21	21 4
5	25 5	25 10	5	26 3	26 8

Length of the Measurement, being

f. i.	f. i.	f. i.	f. i.
5 5	5 6	5 7	5 8

brd. in f. i.	Content f. i. p.	Contens f. i. p.	brd. in f. i.	Content f. i. p.	Content f. i. p.
2	10 10	11	2	11 2	11 4
3	1 4 3	1 4 6	3	1 4 9	1 5
4	1 9 8	1 10	4	1 10 4	1 10 8
5	2 3 1	2 3 6	5	2 3 11	2 4 4
6	2 8 6	2 9	6	2 9 6	2 10
7	3 1 11	3 2 6	7	3 3 1	3 3 8
8	3 7 4	3 8	8	3 8 8	3 9 4
9	4 9	4 1 6	9	4 2 3	4 3
10	4 4 2	4 7	10	4 7 10	4 8 8
11	4 11 11	5 6	11	5 1 5	5 2 4
1	5 5	5 6	1	5 7	5 8
2	10 10	11	2	11 2	11 4
3	16 3	16 6	3	16 9	17
4	21 8	22	4	22 4	22 8
5	27 1	27 6	5	27 11	28 4

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.
5	9	5	10	5	11	6

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2		11	6		11	8		2		11	10	1		
	3	1	5	3	1	5	6		3	1	5	9	1	6	
	4	1	11		1	11	4		4	1	11	8	2		
	5	2	4	9	2	5	2		5	2	5	7	2	6	
	6	2	10	6	2	11			6	2	11	6	3		
	7	3	4	3	3	4	10		7	3	5	5	3	6	
	8	3	10		3	10	8		8	3	11	4	4		
	9	4	3	9	4	4	6		9	4	5	3	4	6	
	10	4	9	6	4	10	4		10	4	11	2	5		
	11	5	3	3	5	4	2		11	5	5	1	5	6	
1		5	9		5	10		1		5	11		6		
2		11	6		11	8		2		11	10		12		
3		17	3		17	6		3		17	9		18		
4		23			23	4		4		23	8		24		
5		28	9		29	2		5		29	7		30		

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.	i.
6	1	6	2	6	3	6	4

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1		2	1		4		2	1		6	1		8
	3	1	6	3	1	6	6		3	1	6	9	1	7	
	4	2		4	2		8		4	2	1		2	1	4
	5	2	6	5	2	6	10		5	2	7	3	2	7	8
	6	3		6	3	1			6	3	1	6	3	2	
	7	3	6	7	3	7	2		7	3	7	9	3	9	4
	8	4		8	4	1	4		8	4	2		4	3	8
	9	4	6	9	4	7	6		9	4	8	3	4	9	
	10	5		10	5	1	8		10	5	2	6	5	4	4
	11	5	6	11	5	7	10		11	5	8	9	5	10	8
1		6	1		6	2		1		6	3		6	4	
2		12	2		12	4		2		12	6		12	8	
3		18	3		18	6		3		18	9		19		
4		24	4		24	8		4		25			25	4	
5		30	5		30	10		5		31	3		31	8	
6		36	6		37			6		37	6		38		

Length

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.	i.
6	5	6	6	6	7	6	8

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1		10	1	1			2	1	1	2	1	1	4
	3	1	7	3	1	7	6		3	1	7	9	1	8	
	4	2	1	8	2	2			4	2	2	4	2	2	8
	5	2	8	1	2	8	6		5	2	8	11	2	9	4
	6	3	2	6	3	3			6	3	3	6	3	4	
	7	3	8	11	3	9	6		7	3	10	1	3	10	8
	8	4	3	4	4	4			8	4	4	8	4	5	4
	9	4	9	9	4	10	6		9	4	11	3	5		
	10	5	4	2	5	5			10	5	5	10	5	6	8
	11	5	10	7	5	11	6		11	6		5	6	1	4
1		6	5		6	6		1		6	7		6	8	
2		12	10		13			2		13	2		13	4	
3		19	3		19	6		3		19	9		20		
4		25	8		26			4		26	4		26	8	
5		32	1		32	6		5		32	11		33	4	
6		38	6		39			6		39	6		40		

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.	i.
6	9	6	10	6	11	7	

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1	1	6	1	1	8		2	1	1	10	1	2	
	3	1	8	3	1	8	6		3	1	8	9	1	9	
	4	2	3		2	3	4		4	2	3	8	2	4	
	5	2	9	9	2	10	2		5	2	10	7	2	11	
	6	3	4	6	3	5			6	3	5	6	3	6	
	7	3	11	3	3	11	10		7	4		5	4	1	
	8	4	6		4	6	8		8	4	7	4	4	8	
	9	5		9	5	1	6		9	5	2	3	5	3	
	10	5	7	6	5	8	4		10	5	9	2	5	10	
	11	6	2	3	6	3	2		11	6	4	1	6	5	
1		6	9		6	10		1		6	11		7		
2		13	6		13	8		2		13	10		14		
3		20	3		20	6		3		20	9		21		
4		27			27	4		4		27	8		28		
5		33	9		34	2		5		34	7		35		
6		40	6		41			6		41	6		42		

Length of the Measurement being

	f. 7 i. 1	f. 7 i. 2	f. 7 i. 3	f. 7 i. 4
breadth f. i.	Content f. i. p.	Content f. i. p.	breadth f. i.	Content f. i. p.	Content f. i. p.
2	1 2 2	1 2 4	2	1 2 6	1 2 8
3	1 9 3	1 9 6	3	1 9 9	1 10
4	2 4 4	2 4 4	4	2 4	2 5 4
5	2 11 5	2 11 10	5	3 3	3 8
6	3 6 6	3 7	6	3 7 6	3 8
7	4 1 7	4 2 2	7	4 2 9	4 3 4
8	4 8 8	4 9 4	8	4 10	4 10 8
9	5 3 9	5 4 6	9	5 5 3	5 6
10	5 10 10	5 11 8	10	6 6	6 1 4
11	6 5 11	6 6 10	11	6 7 9	6 8 8
1	7 1	7 2	1	7 3	7 4
2	14 2	14 4	2	14 6	14 8
3	21 3	21 6	3	21 9	22
4	28 4	28 8	4	29	29 4
5	35 5	35 10	5	36 3	36 8
6	42 6	43	6	43 6	44
7	49 7	50 2	7	50 9	51 4

Length of the Measurement being

	f. 7 i. 5	f. 7 i. 6	f. 7 i. 7	f. 7 i. 8
breadth f. i.	Content f. i. p.	Content f. i. p.	breadth f. i.	Content f. i. p.	Content f. i. p.
2	1 2 10	1 3 2	2	1 3 2	1 3 4
3	1 10 3	1 10 8	3	1 10 9	1 11
4	2 5 8	2 6	4	2 6 4	2 6 8
5	3 1 1	3 1 6	5	3 1 11	3 2 4
6	3 8 6	3 9	6	3 9 6	3 10
7	4 3 11	4 4 6	7	4 5 1	4 5 8
8	4 11 4	5	8	5 8	5 1 4
9	5 6 9	5 7 6	9	5 8 3	5 9
10	6 2 2	6 3	10	6 3 10	6 4 8
11	6 9 7	6 10 6	11	6 11 5	7 4
1	7 5	7 6	1	7 7	7 8
2	14 10	15	2	15 2	15 4
3	22 3	22 6	3	22 9	23
4	29 8	30	4	30 4	30 8
5	37 1	37 6	5	37 11	38 4
6	44 6	45	6	45 6	46
7	51 11	52 6	7	53 1	53 8

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.
7	9	7	10	7	11	8

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1	3	6	1	3	8		2	1	3	10	1	4	11
	3	1	11	3	1	11	6		3	1	11	9	2		
	4	2	7		2	7	4		4	2	7	8	2	8	
	5	3	2	9	3	3	2		5	3	3	7	3	4	
	6	3	10	6	3	11			6	3	11	6	4		
	7	4	6	3	4	6	10		7	4	7	5	4	8	
	8	5	2		5	2	8		8	5	3	4	5	4	
	9	5	9	9	5	10	6		9	5	11	3	6		
	10	6	5	6	6	6	4		10	6	7	2	6	8	
	11	7	1	3	7	2	2		11	7	3	1	7	4	
1		7	9		7	10		1		7	11		8		
2		15	6		15	8		2		15	10		16		
3		23	3		23	6		3		23	9		24		
4		31			31	4		4		31	8		32		
5		38	9		39	2		5		39	7		40		
6		46	6		47			6		47	6		48		
7		54	3		54	10		7		55	5		56		

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.	i.
8	1	8	2	8	3	8	4

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1	4	2	1	4	4		2	1	4	6	1	4	8
	3	2		3	2		6		3	2		9	2	1	
	4	2	8	4	2	8	8		4	2	9		2	9	4
	5	3	4	5	3	4	10		5	3	5	3	3	5	8
	6	4		6	4	1			6	4	1	6	4	2	
	7	4	8	7	4	9	2		7	4	9	9	4	10	4
	8	5	4	8	5	5	4		8	5	6		5	6	8
	9	6		9	6	1	6		9	6	3	3	6	3	
	10	6	8	10	6	9	8		10	6	10	6	6	11	4
	11	7	4	11	7	5	10		11	7	6	9	7	7	8
1		8	1		8	2		1		8	3		8	4	
2		16	2		16	4		2		16	6		16	8	
3		24	3		24	6		3		24	9		25		
4		32	4		32	8		4		33			33	4	
5		40	5		40	10		5		41	3		41	8	
6		48	6		49			6		49	6		50		
7		56	7		55	2		7		57	9		58	4	
8		64	8		65	4		8		66			66	8	

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.	i.
8	5	8	6	8	7	8	8

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1	4	10	1	5			2	1	5	2	1	5	4
	3	2	1	3	2	10	6		3	2	1	9	2	2	
	4	2	9	8	2	10			4	2	10	4	2	10	8
	5	3	6	1	3	6	6		5	3	6	11	3	7	4
	6	4	2	6	4	3			6	4	3	6	4	4	
	7	4	10	11	4	11	6		7	5		1	5		8
	8	5	7	4	5	8			8	5	8	8	5	9	4
	9	6	3	9	6	4	6		9	6	5	3	6	6	
	10	7		2	7	1			10	7	1	10	7	2	8
	11	7	8	7	7	9	6		11	7	10	5	7	11	4
1		8	5		8	6		1		8	7		8	8	
2		16	10		17			2		17	2		17	4	
3		25	3		25	6		3		25	9		26		
4		33	8		34			4		34	4		34	8	
5		42	1		42	6		5		42	11		43	4	
6		50	6		51			6		51	6		52		
7		58	11		59	6		7		60	1		60	8	
8		67	4		68			8		68	8		69	4	

Length of the Measurement being

f.	i.	f.	i.	f.	i.	f.
8	9	8	10	8	11	9

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.
	2	1	5	6	1	5	8		2	1	5	10	1	6	
	3	2	2	3	2	2	6		3	2	2	9	2	3	
	4	2	11		2	11	4		4	2	11	8	3		
	5	3	7	9	3	8	2		5	3	8	7	3	9	
	6	4	4	5	4	5			6	4	5	6	4	6	
	7	5	1	3	5	1	10		7	5	2	5	5	3	
	8	5	10		5	10	8		8	5	11	4	6		
	9	6	6	9	6	7	6		9	6	8	3	6	9	
	10	7	3	6	7	4	4		10	7	5	2	7	6	
	11	8		3	8	1	2		11	8	2	1	8	3	
1		8	9		8	10	0	1		8	11		9		
2		17	6		17	8		2		17	10		18		
3		26	3		26	6		3		26	9		27		
4		35			35	4		4		35	8		36		
5		43	9		44	2		5		44	7		45		
6		52	6		53			6		53	6		54		
7		61	3		61	10		7		62	5		63		
8		70			70	8		8		71	4		72		

Length of the Measurement being

	f. 9	i. 1		f. 9	i. 2		f. 9	i. 3		f. 9	i. 4	
breadth f. i.	Content f.	i.	p.	Content f.	i.	p.	breadth f. i.	Content f.	i.	p.	Content f.	i. p.
2	1	6	2	1	6	4	2	1	6	6	1	6 8
3	2	3	3	2	3	6	3	2	3	9	2	4
4	3		4	3		8	4	3	1		3	1 4
5	3	9	5	3	9	10	5	3	10	3	3	10 8
6	4	6	6	4	7		6	4	7	6	4	8
7	5	3	7	5	4	2	7	5	5	9	5	5 4
8	6		8	6	1	4	8	6	2		6	2 8
9	6	9	9	6	10	6	9	6	11	3	7	
10	7	6	10	7	7	8	10	7	8	6	7	9 4
11	8	3	11	8	4	10	11	8	5	9	8	6 8
1	9	1		9	2		1	9	3		9	4
2	18	2		18	4		2	18	6		18	8
3	27	3		27	6		3	27	9		28	
4	36	4		36	8		4	37			37	4
5	45	5		45	10		5	46	3		46	8
6	54	6		54			6	55	6		56	
7	63	7		64	2		7	64	9		65	4
8	72	8		73	4		8	74			74	8
9	81	9		82	6		9	83	3		84	

	9 f. 5 i.			9 f. 6 i.			9 f. 7 i.			9 f. 8 i.		
breadth f. i.	Content f.	i.	p.	Content f.	i.	p.	breadth f. i.	Content f.	i.	p.	Content f.	i. p.
2	1	6	10	1	7		2	1	7	2	1	7 4
3	2	4	3	2	4	6	3	2	4	9	2	5
4	3	1	8	3	2		4	3	2	4	3	2 8
5	3	11	1	3	11	6	5	3	11	11	4	4
6	4	8	6	4	9		6	4	9	6	4	10
7	5	5	11	5	6	6	7	5	7	1	5	7 8
8	6	3	4	6	4		8	6	4	8	6	5 4
9	7		9	7	1	6	9	7	2	3	7	3
10	7	10	2	7	11		10	7	11	10	8	8
11	8	7	7	8	8	6	11	8	9	5	8	10 4
1	9	5		9	6		1	9	7		9	8
2	18	10		19			2	19	2		19	4
3	28	3		28	6		3	28	9		29	
4	37	8		38			4	38	4		38	8
5	47	1		47	6		5	48	11		48	4
6	56	6		57			6	57	6		58	
7	65	11		66	6		7	67	1		67	8
8	75	4		76			8	76	8		77	4
9	84	9		85	6		9	86	3		87	

Length of the Measurement being

breadth f. i.	9 f. 9 i. Content f. i. p.	9 f. 10 i. Content f. i. p.	breadth f. i.	9 f. 11 i. Content f. i. p.	10 f. Content f. i. p.
2	1 7 6	1 7 8	2	1 7 10	1 8
3	2 5 3	2 5 6	3	2 5 9	2 6
4	3 3	3 3 4	4	3 3 8	3 4
5	4 9	4 1 2	5	4 1 7	4 2
6	4 10 6	4 11	6	4 11 6	5
7	5 8 3	5 8 10	7	5 9 5	5 10
8	6 6	6 6 8	8	6 7 4	6 8
9	7 3 9	7 4 6	9	7 5 3	7 6
10	8 1 6	8 2 4	10	8 3 2	8 4
11	8 11 3	9 2	11	9 1 1	9 2
1	9 9	9 10	1	9 11	10
2	19 6	19 8	2	19 10	20
3	29 3	29 6	3	29 9	30
4	39	39 4	4	39 8	40
5	48 9	49 2	5	49 7	50
6	58 6	59	6	59 6	60
7	68 3	68 10	7	69 5	70
8	78	78 8	8	79 4	80
9	87 9	88 6	9	89 3	90

breadth f. i.	10 f. 1 i. Content f. i. p.	10 f. 2 i. Content f. i. p.	breadth f. i.	10 f. 3 i. Content f. i. p.	10 f. 4 i. Content f. i. p.
2	1 8 2	1 8 4	2	1 8 6	1 8 8
3	2 6 3	2 6 6	3	2 6 9	2 7
4	3 4 4	3 4 8	4	3 5	3 5 4
5	4 2 5	4 2 10	5	4 3 3	4 3 8
6	5 6	5 1	6	5 1 6	5 2
7	5 10 7	5 11 2	7	5 11 9	6 4
8	6 8 8	6 9 4	8	6 10	6 10 8
9	7 6 9	7 7 6	9	7 8 3	7 9
10	8 4 10	8 5 8	10	8 6 6	8 7 4
11	9 2 11	9 3 10	11	9 4 9	9 5 8
1	10 1	10 2	1	10 3	10 4
2	20 2	20 4	2	20 6	20 8
3	30 3	30 6	3	30 9	31
4	40 4	40 8	4	41	41 4
5	50 5	50 10	5	51 3	51 8
6	60 6	61	6	61 6	62
7	70 7	71 2	7	71 9	72 4
8	80 8	81 4	8	82	82 8
9	90 9	91 6	9	92 3	93
			10	102 6	103 4

Length of the Measurement being

breadth f. i.	10 f. 5 i. Content f. i. p.	10 f. 6 i. Content f. i. p.	10 f. 7 i. Content f. i. p.	10 f. 8 i. Content f. i. p.
2	1 8 10	1 9	1 9 2	1 9 4
3	2 7 3	2 7 6	2 7 9	2 8
4	3 5 8	3 6	3 6 4	3 6 8
5	4 4 1	4 4 6	4 4 11	4 5 4
6	5 2 6	5 3	5 3 6	5 4
7	6 11	6 1 6	6 2 1	6 2 8
8	6 11 4	7	7 8	7 1 4
9	7 9 9	7 10 6	7 11 3	8
10	8 8 2	8 9	8 9 10	8 10 8
11	9 6 7	9 7 6	9 8 5	9 9 4
1	10 5	10 6	10 7	10 8
2	20 10	21	21 2	21 4
3	31 3	31 6	31 9	32
4	41 8	42	42 4	42 8
5	52 1	52 6	52 11	53 4
6	62 6	63	63 6	64
7	72 11	73 6	74 1	74 8
8	83 4	84	84 8	85 4
9	93 9	94 6	95 3	96
10	104 2	105	105 10	106 8

breadth f. i.	10 f. 9 i. Content f. i. p.	10 f. 10 i. Content f. i. p.	10 f. 11 i. Content f. i. p.	11 f. Content f. i. p.
2	1 9 6	1 9 8	1 9 10	1 10
3	2 8 3	2 8 6	2 8 9	2 9
4	3 7	3 7 4	3 7 8	3 8
5	4 5 9	4 6 2	4 6 7	4 7
6	5 4 6	5 5	5 5 6	5 6
7	6 3 3	6 3 10	6 5 5	6 5
8	7 2	7 2	7 4 4	7 4
9	8 9	8 1	8 3 3	8 3
10	8 11 6	9 4	9 2 2	9 2
11	9 10 3	9 11 2	10 1 1	10 1
1	10 9	10 10	10 11	11
2	21 6	21 8	21 10	22
3	32 3	32 6	32 9	33
4	43	43 4	43 8	44
5	53 9	54 2	54 7	55
6	64 6	65	65 6	66
7	75 3	75 10	76 5	77
8	86	86 8	87 4	88
9	96 9	97 6	98 3	99
10	107 6	108 4	109 2	110

Length of the Measurement being

breadth f. i.	11 f. 1 i. Content f. i. p.	11 f. 2 i. Content f. i. p.	breadth f. i.	11 f. 3 i. Content f. i. p.	11 f. 4 i. Content f. i. p.
2	1 10 2	1 10 4	2	1 10 6	1 10 8
3	2 9 3	2 9 6	3	2 9 9	2 10
4	3 8 4	3 8 8	4	3 9	3 9 4
5	4 7 5	4 7 10	5	4 8 3	4 8 8
6	5 6 6	5 7	6	5 7 6	5 8
7	6 5 7	6 6 2	7	6 6 9	6 7 4
8	7 4 8	7 5 4	8	7 6	7 6 8
9	8 3 9	8 4 6	9	8 5 3	8 6
10	9 2 10	9 3 8	10	9 4 6	9 5 4
11	10 1 11	10 2 10	11	10 3 9	10 4 8
1	11 1	11 2	1	11 3	11 4
2	22 2	22 4	2	22 6	22 8
3	33 3	33 6	3	33 9	34
4	44 4	44 8	4	45	45 4
5	55 5	55 10	5	56 3	56 8
6	66 6	67	6	67 6	68
7	77 7	78 2	7	78 9	79 4
8	88 8	89 4	8	90	90 8
9	99 9	100 6	9	101	102

breadth f. i.	11 f. 5 i. Content f. i. p.	11 f. 6 i. Content f. i. p.	breadth f. i.	11 f. 7 i. Content f. i. p.	11 f. 8 i. Content f. i. p.
2	1 10 10	1 11	2	1 11 2	1 11 4
3	2 10 3	2 10 6	3	2 10 9	2 11
4	3 9 8	3 10	4	3 10 4	3 10 8
5	4 9 1	4 9 6	5	4 9 11	4 10 4
6	5 8 6	5 9	6	5 9 6	5 10
7	6 7 11	6 8 6	7	6 9 1	6 9 8
8	7 7 4	7 8	8	7 8 8	7 9 4
9	8 6 9	8 7 6	9	8 8 3	8 9
10	9 6 2	9 7	10	9 7 10	9 8 8
11	10 5 7	10 6 6	11	10 7 5	10 8 4
1	11 5	11 6	1	11 7	11 8
2	22 10	23	2	23 2	23 4
3	34 3	34 6	3	34 9	35
4	45 8	46	4	46 4	46 8
5	57 1	57 6	5	57 11	58 4
6	68 6	69	6	69 6	70
7	79 11	80 6	7	81 1	81 8
8	91 4	92	8	92 8	93 4
9	102 9	103 6	9	104 3	105

Length of the Measurement being

breadth f. i.	11 f. 9 i. Content f. i. p.	11 f. 10 i. Content f. i. p.	breadth f. i.	11 f. 11 i. Content f. i. p.	12 f. Content f. i. p.
2	1 11 6	1 11 8	2	1 11 10	2
3	2 11 3	2 11 6	3	2 11 9	3
4	3 11	3 11 4	4	3 11 8	4
5	4 10 9	4 11 2	5	4 11 7	5
6	5 10 6	5 11	6	5 11 6	6
7	6 10 3	6 10 10	7	6 11 5	7
8	7 10	7 10 8	8	7 11 4	8
9	8 9 9	8 10 6	9	8 11 3	9
10	9 9 6	9 10 4	10	9 11 2	10
11	10 9 3	10 10 2	11	10 11 1	11
1	11 9	11 10	1	11 11	12
2	23 6	23 8	2	23 10	24
3	35 3	35 6	3	35 9	36
4	47	47 4	4	47 8	48
5	58 9	59 2	5	59 7	60
6	70 6	71	6	71 6	72
7	82 3	82 10	7	83 5	84
8	94	94 8	8	95 4	96
9	105 9	106 6	9	107 3	108

Length of the Measurement, in Feet and Inches, being

breadth f. i.	f. i. 12 1 Content f. i. p.	f. i. 12 2 Content f. i. p.	f. i. 12 3 Content f. i. p.	f. i. 12 4 Content f. i. p.
2	2 0 2	2 0 4	2 0 6	2 0 8
3	3 0 3	3 0 6	3 0 9	3 1 0
4	4 0 4	4 0 8	4 1 0	4 1 4
5	5 0 5	5 0 10	5 1 3	5 1 8
6	6 0 6	6 1 0	6 1 6	6 2 0
7	7 0 7	7 1 2	7 1 9	7 2 4
8	8 0 8	8 1 4	8 2 0	8 2 8
9	9 0 9	9 1 6	9 2 3	9 3 0
10	10 0 10	10 1 8	10 2 6	10 3 4
11	11 0 11	11 1 10	11 2 9	11 3 8

Length of the Measurement, in Feet and Inches, being

	f. i.	f. i.	f. i.	f. i.
	12 1	12 2	12 3	12 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1	12 1 0	12 2 0	12 3 0	12 4 0
2	24 2 0	24 4 0	24 6 0	24 8 0
3	36 3 0	36 6 0	36 9 0	37 0 0
4	48 4 0	48 8 0	49 0 0	49 4 0
5	60 5 0	60 10 0	61 3 0	61 8 0
6	72 6 0	73 0 0	73 6 0	74 0 0
7	84 7 0	85 2 0	85 9 0	86 4 0
8	96 8 0	97 4 0	98 0 0	98 8 0
9	108 9 0	109 6 0	110 3 0	111 0 0
10	120 10 0	121 8 0	122 6 0	123 4 0
11	132 11 0	133 10 0	134 9 0	135 8 0
12	145 0 0	146 0 0	147 0 0	148 0 0

	f. i.	f. i.	f. i.	f. i.
	12 5	12 6	12 7	12 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 0 10	2 1 0	2 1 2	2 1 4
3	3 1 3	3 1 6	3 1 9	3 2 0
4	4 1 8	4 2 0	4 2 4	4 2 8
5	5 2 1	5 2 6	5 2 11	5 3 4
6	6 2 6	6 3 0	6 3 6	6 4 0
7	7 2 11	7 3 6	7 4 1	7 4 8
8	8 3 4	8 4 0	8 4 8	8 5 4
9	9 3 9	9 4 6	9 5 3	9 6 0
10	10 4 2	10 5 0	10 5 10	10 6 8
11	11 4 7	11 5 6	11 6 5	11 7 4
1	12 5 0	12 6 0	12 7 0	12 8 0
2	24 10 0	25 0 0	25 2 0	25 4 0
3	37 3 0	37 6 0	37 9 0	38 0 0
4	49 8 0	50 0 0	50 4 0	50 8 0
5	62 1 0	62 6 0	62 11 0	63 4 0
6	74 6 0	75 0 0	75 6 0	76 0 0
7	86 11 0	87 6 0	88 1 0	88 8 0
8	99 4 0	100 0 0	100 8 0	101 4 0
9	111 9 0	112 6 0	113 3 0	114 0 0
10	124 2 0	125 0 0	125 10 0	126 8 0
11	136 7 0	137 6 0	138 5 0	139 4 0
12	149 0 0	150 0 0	151 0 0	152 0 0

Length

Length of the Meaſurement, in Feet and Inches, being

	f. i.	f. i.	f. i.	f.
	12 9	12 10	12 11	13

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 1 6	2 1 8	2 1 10	2 2 0
3	3 2 3	3 2 6	3 2 9	3 3 0
4	4 3 0	4 3 4	4 3 8	4 4 0
5	5 3 9	5 4 2	5 4 7	5 5 0
6	6 4 6	6 5 0	6 5 6	6 6 0
7	7 5 3	7 5 10	7 6 5	7 7 0
8	8 6 0	8 6 8	8 7 4	8 8 0
9	9 6 9	9 7 6	9 8 3	9 9 0
10	10 7 6	10 8 4	10 9 2	10 10 0
11	11 8 3	11 9 2	11 10 1	11 11 0
1	12 9 0	12 10 0	12 11 0	13 0 0
2	25 6 0	25 8 0	25 10 0	26 0 0
3	38 3 0	38 6 0	38 9 0	39 0 0
4	51 0 0	51 4 0	51 8 0	52 0 0
5	63 9 0	64 2 0	64 7 0	65 0 0
6	76 6 0	77 0 0	77 6 0	78 0 0
7	89 3 0	89 10 0	90 5 0	91 0 0
8	102 0 0	102 8 0	103 4 0	104 0 0
9	114 9 0	115 6 0	116 3 0	117 0 0
10	127 6 0	128 4 0	129 2 0	130 0 0
11	140 3 0	141 2 0	142 1 0	143 0 0
12	153 0 0	154 0 0	155 0 0	156 0 0

	f. i.	f. i.	f. i.	f. i.
	13 1	13 2	13 3	13 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 2 2	2 2 4	2 2 6	2 2 8
3	3 3 3	3 3 6	3 3 9	3 4 0
4	4 4 4	4 4 8	4 5 0	4 5 4
5	5 5 5	5 5 10	5 6 3	5 6 8
9	6 6 6	6 7 0	6 7 6	6 8 0
7	7 7 7	7 8 2	7 8 9	7 9 4
8	8 8 8	8 9 4	8 10 0	8 10 8
9	9 9 9	9 10 6	9 11 3	10 0 0
10	10 10 10	10 11 8	11 0 6	11 1 4
11	11 11 11	12 0 10	12 1 9	12 2 8
1	13 1 0	13 2 0	13 3 0	13 4 0
2	26 2 0	26 4 0	26 6 0	26 8 0

Length

Length of the Measurement, in Feet and Inches, being

	f. i. 13 1			f. i. 13 2			f. i. 13 3			f. i. 13 4		
breadth f. i.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
3	39	3	0	39	6	0	39	9	0	40	0	0
4	52	4	0	52	8	0	53	0	0	53	4	0
5	65	5	0	65	10	0	66	3	0	66	8	0
6	78	6	0	79	0	0	79	6	0	80	0	0
7	91	7	0	92	2	0	92	9	0	93	4	0
8	104	8	0	105	4	0	106	0	0	106	8	0
9	117	9	0	118	6	0	119	3	0	120	0	0
10	130	10	0	131	8	0	132	6	0	133	4	0
11	143	11	0	144	10	0	145	9	0	146	8	0
12	157	0	0	158	0	0	159	0	0	160	0	0
13										173	4	0

	f. i. 13 5			f. i. 13 6			f. i. 13 7			f. i. 13 8		
breadth f. i.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
2	2	2	10	2	3	0	2	3	2	2	3	4
3	3	4	3	3	4	6	3	4	9	3	5	0
4	4	5	8	4	6	0	4	6	4	4	6	8
5	5	7	1	5	7	6	5	7	11	5	8	4
6	6	8	6	6	9	0	6	9	6	6	10	0
7	7	9	11	7	10	6	7	11	1	7	11	8
8	8	11	4	9	0	0	9	0	8	9	1	4
9	10	0	9	10	1	6	10	2	3	10	3	0
10	11	2	2	11	3	0	11	3	10	11	4	8
11	12	3	7	12	4	6	12	5	5	12	6	4
1	13	5	0	13	6	0	13	7	0	13	8	0
2	26	10	0	27	0	0	27	2	0	27	4	0
3	40	3	0	40	6	0	40	9	0	41	0	0
4	53	8	0	54	0	0	54	4	0	54	8	0
5	67	1	0	67	6	0	67	11	0	68	4	0
6	80	6	0	81	0	0	81	6	0	82	0	0
7	93	11	0	94	6	0	95	1	0	95	8	0
8	107	4	0	108	0	0	108	8	0	109	4	0
9	120	9	0	121	6	0	122	3	0	123	0	0
10	134	2	0	135	0	0	135	10	0	136	8	0
11	147	7	0	148	6	0	149	5	0	150	4	0
12	161	0	0	162	0	0	163	0	0	164	0	0
13	174	5	0	175	6	0	176	7	0	177	0	0

Length of the Meaſurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f.
13 9	13 10	13 11	14

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 3 6	2 3 8	2 3 10	2 4 0
3	3 5 3	3 5 6	3 5 9	3 6 0
4	4 7 0	4 7 4	4 7 8	4 8 0
5	5 8 9	5 9 2	5 9 7	5 10 0
6	6 10 6	6 11 0	6 11 6	7 0 0
7	8 0 3	8 0 10	8 1 5	8 2 0
8	9 2 0	9 2 8	9 3 4	9 4 0
9	10 3 9	10 4 6	10 5 3	10 6 0
10	11 5 6	11 6 4	11 7 2	11 8 0
11	12 7 3	12 8 2	12 9 1	12 10 0
1	13 9 0	13 10 0	13 11 0	14 0 0
2	27 6 0	27 8 0	27 10 0	28 0 0
3	41 3 0	41 6 0	41 9 0	42 0 0
4	55 0 0	55 4 0	55 8 0	56 0 0
5	68 9 0	69 2 0	69 7 0	70 0 0
6	82 6 0	83 0 0	83 6 0	84 0 0
7	96 3 0	96 10 0	97 5 0	98 0 0
8	110 0 0	110 8 0	111 4 0	112 0 0
9	123 9 0	124 6 0	125 3 0	126 0 0
10	137 6 0	138 4 0	139 2 0	140 0 0
11	151 3 0	152 2 0	156 1 0	154 0 0
12	165 0 0	166 0 0	167 0 0	168 0 0
13	178 9 0	179 10 0	180 11 0	182 0 0

f. i.	f. i.	f. i.	f. i.
14 1	14 2	14 3	14 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 4 2	2 4 4	2 4 6	2 4 8
3	3 6 3	3 6 6	3 6 9	3 7 0
4	4 8 4	4 8 8	4 9 0	4 9 4
5	5 10 5	5 10 10	5 11 3	5 11 8
6	7 0 6	7 1 0	7 1 6	7 2 0
7	8 2 7	8 3 2	8 3 9	8 4 4
8	9 4 8	9 5 4	9 6 0	9 6 8
9	10 6 9	10 7 6	10 8 3	10 9 0
10	11 8 10	11 9 8	11 10 6	11 11 4
11	12 10 11	12 11 10	13 0 9	13 1 8

Length of the Measurement, in Feet and Inches, being

	f. i.	f. i.	f. i.	f. i.
	14 1	14 2	14 3	14 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
1	14 1 0	14 2 0	14 3 0	14 4 0
2	28 2 0	28 4 0	28 6 0	28 8 0
3	52 3 0	42 6 0	42 9 0	43 0 0
4	56 4 0	56 8 0	57 0 0	57 4 0
5	70 5 0	70 10 0	71 3 0	71 8 0
6	84 6 0	85 0 0	85 6 0	86 0 0
7	98 7 0	99 2 0	99 9 0	100 4 0
8	112 8 0	113 4 0	114 0 0	114 8 0
9	126 9 0	127 6 0	128 3 0	129 0 0
10	140 10 0	141 8 0	142 6 0	143 4 0
11	154 11 0	155 10 0	156 9 0	157 8 0
12	169 0 0	170 0 0	171 0 0	172 0 0
13	183 1 0	184 2 0	185 3 0	186 4 0
14	197 2 0	198 4 0	199 6 0	200 8 0

	f. i.	f. i.	f. i.	f. i.
	14 5	14 6	14 7	14 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 4 10	2 5 0	2 5 2	2 5 4
3	3 7 3	3 7 6	3 7 9	3 8 0
4	4 9 8	4 10 0	4 10 4	4 10 8
5	6 0 1	6 0 6	6 0 11	6 1 4
6	7 2 6	7 3 0	7 3 6	7 4 0
7	8 4 11	8 5 6	8 6 1	8 6 8
8	9 7 4	9 8 0	9 8 8	9 9 4
9	10 9 9	10 10 6	10 11 3	11 0 0
10	12 0 2	12 1 0	12 1 10	12 2 8
11	13 2 7	13 3 6	13 4 5	13 5 4
1	14 5 0	14 6 0	14 7 0	14 8 0
2	28 10 0	29 0 0	29 2 0	29 4 0
3	43 3 0	43 6 0	43 9 0	44 0 0
4	57 8 0	58 0 0	58 4 0	58 8 0
5	72 1 0	72 6 0	72 11 0	73 4 0
6	86 6 0	87 0 0	87 6 0	88 0 0
7	100 11 0	101 6 0	102 1 0	102 8 0
8	115 4 0	116 0 0	116 8 0	117 4 0
9	129 9 0	130 6 0	131 3 0	132 0 0

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
14 5	14 6	14 7	14 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
10	144 2 0	145 0 0	145 10 0	146 8 0
11	158 7 0	159 6 0	160 5 0	161 4 0
12	173 0 0	174 0 0	175 0 0	176 0 0
13	187 5 0	188 6 0	189 7 0	190 8 0
14	201 10 0	203 0 0	204 2 0	205 4 0

	f. i.	f. i.	f. i.	f.
	14 9	14 10	14 11	15

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 5 6	2 5 8	2 5 10	2 6 0
3	3 8 3	3 8 6	3 8 9	3 9 0
4	4 11 0	4 11 4	4 11 8	5 0 0
5	6 1 9	6 2 2	6 2 7	6 3 0
6	7 4 6	7 5 0	7 5 6	7 6 0
7	8 7 3	8 7 10	8 8 5	8 9 0
8	9 10 0	9 10 8	9 11 4	10 0 0
9	11 0 9	11 1 6	11 2 3	11 3 0
10	12 3 6	12 4 4	12 5 2	12 6 0
11	13 6 3	13 7 2	13 8 1	13 9 0
1	14 9 0	14 10 0	14 11 0	15 0 0
2	29 6 0	29 8 0	29 10 0	30 0 0
3	44 3 0	44 6 0	44 9 0	45 0 0
4	59 0 0	59 4 0	59 8 0	60 0 0
5	73 9 0	74 2 0	74 7 0	75 0 0
6	88 6 0	89 0 0	89 6 0	90 0 0
7	103 3 0	103 10 0	104 5 0	105 0 0
8	118 0 0	118 8 0	119 4 0	120 0 0
9	132 9 0	133 6 0	134 3 0	135 0 0
10	147 6 0	148 4 0	149 2 0	150 0 0
11	162 3 0	163 2 0	164 1 0	165 0 0
12	177 0 0	178 0 0	179 0 0	180 0 0
13	191 9 0	192 10 0	193 11 0	195 0 0
14	206 6 0	207 8 0	208 10 0	210 0 0

Length

Length of the Measurement, in Feet and Inches, being

	f. i. 15 1			f. i. 15 2			f. i. 15 3			f. i. 15 4		
breadth f. i.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
2	2	6	2	2	6	4	2	6	6	2	6	8
3	3	9	3	3	9	6	3	9	9	3	10	0
4	5	0	4	5	0	8	5	1	0	5	1	4
5	6	3	5	6	3	10	6	4	3	6	4	8
6	7	6	6	7	7	0	7	7	6	7	8	0
7	8	9	7	8	10	2	8	10	9	8	11	4
8	10	0	8	10	1	4	10	2	0	10	2	8
9	11	3	9	11	4	6	11	5	3	11	6	0
10	12	6	10	12	7	8	12	8	6	12	9	4
11	13	9	11	13	10	10	13	11	9	14	0	8
1	15	1	0	15	2	0	15	3	0	15	4	0
2	30	2	0	30	4	0	30	6	0	30	8	0
3	45	3	0	45	6	0	45	9	0	46	0	0
4	60	4	0	60	8	0	61	0	0	61	4	0
5	75	5	0	75	10	0	76	3	0	76	8	0
6	90	6	0	91	0	0	91	6	0	92	0	0
7	105	7	0	106	2	0	106	9	0	107	4	0
8	120	8	0	121	4	0	122	0	0	122	8	0
9	135	9	0	136	6	0	137	3	0	138	0	0
10	150	10	0	151	8	0	152	6	0	153	4	0
11	165	11	0	166	10	0	167	9	0	168	8	0
12	181	0	0	182	0	0	183	0	0	184	0	0
13	196	1	0	197	2	0	198	3	0	199	4	0
14	211	2	0	212	4	0	213	6	0	214	8	0

	f. i. 15 5			f. i. 15 6			f. i. 15 7			f. i. 15 8		
breadth f. i.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
2	2	6	10	2	7	0	2	7	2	2	7	4
3	3	10	3	3	10	6	3	10	9	3	11	0
4	5	1	8	5	2	0	5	2	4	5	2	8
5	6	5	1	6	5	6	6	5	11	6	6	4
6	7	8	6	7	9	0	7	9	6	7	10	0
7	8	11	11	9	0	6	9	1	1	9	1	8
8	10	3	4	10	4	0	10	4	8	10	5	4
9	11	6	9	11	7	6	11	8	3	11	9	0

Length of the Meaſurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
15 5	15 6	15 7	15 8

breadth f. i	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
10	12 10 2	12 11 0	12 11 10	13 0 8
11	14 1 7	14 2 6	14 3 5	14 4 4
1	15 5 0	15 6 0	15 7 0	15 8 0
2	30 10 0	31 0 0	31 2 0	31 4 0
3	46 3 0	46 6 0	46 9 0	47 0 0
4	61 8 0	62 0 0	62 4 0	62 8 0
5	77 1 0	77 6 0	77 11 0	78 4 0
6	92 6 0	93 0 0	93 6 0	94 0 0
7	107 11 0	108 6 0	109 1 0	109 8 0
8	123 4 0	124 0 0	124 8 0	125 4 0
9	138 9 0	139 6 0	140 3 0	141 0 0
10	154 2 0	155 0 0	155 10 0	156 8 0
11	169 7 0	170 6 0	171 5 0	172 4 0
12	185 0 0	186 0 0	187 0 0	188 0 0
13	200 5 0	201 6 0	202 7 0	203 8 0
14	215 10 0	217 0 0	218 2 0	219 4 0
15	231 3 0	232 6 0	233 9 0	235 0 0

f. i.	f. i.	f. i.	f.
15 9	15 10	15 11	16

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 7 6	2 7 8	2 7 10	2 8 0
3	3 11 3	3 11 6	3 11 9	4 0 0
4	5 3 0	5 3 4	5 3 8	5 4 0
5	6 6 9	6 7 2	6 7 7	6 8 0
6	7 10 6	7 11 0	7 11 6	8 0 0
7	9 2 3	9 2 10	9 3 5	9 4 0
8	10 6 0	10 6 8	10 7 4	10 8 0
9	11 9 9	11 10 6	11 11 3	12 0 0
10	13 1 6	13 2 4	13 3 2	13 4 0
11	14 5 3	14 6 2	14 7 1	14 8 0
1	15 9 0	15 10 0	15 11 0	16 0 0
2	31 6 0	31 8 0	31 10 0	32 0 0
3	47 3 0	47 6 0	47 9 0	48 0 0
4	63 0 0	63 4 0	63 8 0	64 0 0
5	78 9 0	79 2 0	79 7 0	80 0 0

Length

Length of the Measurement, in Feet and Inches, being

f.	i.	f.	i.	f.	i.	f.
15	9	15	10	15	11	16

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
6	94 6 0	95 0 0	95 6 0	96 0 0
7	110 3 0	110 10 0	111 5 0	112 0 0
8	126 0 0	126 8 0	127 4 0	128 0 0
9	141 9 0	142 6 0	143 3 0	144 0 0
10	157 6 0	158 4 0	159 2 0	160 0 0
11	173 3 0	174 2 0	175 1 0	176 0 0
12	189 0 0	190 0 0	191 0 0	192 0 0
13	204 9 0	205 10 0	206 11 0	208 0 0
14	220 6 0	221 8 0	222 10 0	224 0 0
15	236 3 0	237 6 0	238 9 0	240 0 0

f.	i.	f.	i.	f.	i.	f.	i.
16	1	16	2	16	3	16	4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 8 2	2 8 4	2 8 6	2 8 8
3	4 0 3	4 0 6	4 0 9	4 1 0
4	5 4 4	5 4 8	5 5 0	5 5 4
5	6 8 5	6 8 10	6 9 3	6 9 8
6	8 0 6	8 1 0	8 1 6	8 2 0
7	9 4 7	9 5 2	9 5 9	9 6 4
8	10 8 8	10 9 4	10 10 0	10 10 8
9	12 0 9	12 1 6	12 2 3	12 3 0
10	13 4 10	13 5 8	13 6 6	13 7 4
11	14 8 11	14 9 10	14 10 9	14 11 8
1	16 1 0	16 2 0	16 3 0	16 4 0
2	32 2 0	32 4 0	32 6 0	32 8 0
3	48 3 0	48 6 0	48 9 0	49 0 0
4	64 4 0	64 8 0	65 0 0	65 4 0
5	80 5 0	80 10 0	81 3 0	81 8 0
6	96 6 0	97 0 0	97 6 0	98 0 0
7	112 7 0	113 2 0	113 9 0	104 4 0
8	128 8 0	129 4 0	130 0 0	130 8 0
9	144 9 0	145 6 0	146 3 0	147 0 0
10	160 10 0	161 8 0	162 6 0	163 4 0
11	176 11 0	177 10 0	178 9 0	179 8 0
12	193 0 0	194 0 0	195 0 0	196 0 0
13	209 1 0	210 2 0	211 3 0	212 4 0
14	225 2 0	226 4 0	227 6 0	228 8 0
15	241 3 0	242 6 0	243 9 0	245 0 0
16	257 4 0	258 8 0	260 0 0	261 4 0

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
16 5	16 6	16 7	16 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 8 10	2 9 0	2 9 2	2 9 4
3	4 1 3	4 1 6	4 1 9	4 2
4	5 5 8	5 6 0	5 6 4	5 6 8
5	6 10 1	6 10 6	6 10 11	6 11 4
6	8 2 6	8 3 0	8 3 6	8 4
7	9 6 11	9 7 6	9 8 1	9 8 8
8	10 11 4	11 0 0	11 0 8	11 1 4
9	12 3 9	12 4 6	12 5 3	12 6
10	13 8 2	13 9 0	13 9 10	13 10 8
11	15 0 7	15 1 6	15 2 5	15 3 4
1	16 5	16 6	16 7	16 8
2	32 10	33 0	33 2	33 4
3	49 3	49 6	49 9	50
4	65 8	66 0	66 4	66 8
5	82 1	82 6	82 11	83 4
6	98 6	99 0	99 6	100
7	114 11	115 6	116 1	116 8
8	131 4	132 0	132 8	133 4
9	147 9	148 6	149 3	150
10	164 2	165 0	165 10	166 8
11	180 7	181 6	182 5	183 4
12	197 0	198 0	199 0	200
13	213 5	214 6	215 7	216 8
14	229 10	231 0	232 2	233 4
15	246 3	247 6	248 9	250
16	262 8	264 0	265 4	266 8

f. i.	f. i.	f. i.	f.
16 9	16 10	16 11	17

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 9 6	2 9 8	2 9 10	2 10
3	4 2 3	4 2 6	4 2 9	4 3
4	5 7 0	5 7 4	5 7 8	5 8
5	6 11 9	7 0 2	7 0 7	7 1
6	8 4 6	8 5 0	8 5 6	8 6
7	9 9 3	9 9 10	9 10 5	9 11

Length

Length of the Measurement, in Feet and Inches, being

f.	i.	f.	i.	f.	i.	f.
16	9	16	10	16	11	17

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
	8	11	2		11	2	8	11	3	4	11	4	
	9	12	6	9	12	7	6	12	8	3	12	9	
	10	13	11	6	14		4	14	1	2	14	2	
	11	15	4	3	15	5	2	15	6	1	15	7	
1		16	9		16	10		16	11		17		
2		33	6	6	33	8		33	10		34		
3		50	3		50	6		50	9		51		
4		67			67	4		67	8		68		
5		83	9		84	2		84	7		85		
6		100	6		101			101	6		102		
7		117	3		117	10		118	5		119		
8		134			134	8		135	4		136		
9		150	9		151	6		152	3		153		
10		167	6		168	4		169	2		170		
11		184	3		185	2		186	1		187		
12		201			202			203			204		
13		217	9		218	10		219	11		221		
14		234	6		235	8		236	10		238		
15		251	3		252	6		253	9		255		
16		268			269	4		270	8		272		

f.	i.	f.	i.	f.	i.	f.	i.
17	1	17	2	17	3	17	4

breadth f.	i.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.	Content f.	i.	p.
	2	2	10	2	2	10	4	2	10	6	2	10	8
	3	4	3	3	4	3	6	4	3	9	4	4	
	4	5	8	4	5	8	8	5	9		5	9	4
	5	7	1	5	7	1	10	7	2	3	7	2	8
	6	8	6	6	8	7		8	7	6	8	8	
	7	9	11	7	10		2	10		9	10	1	4
	8	11	4	8	11	5	4	11	6		11	6	8
	9	12	9	9	12	10	6	12	11	3	13		
	10	14	2	10	14	3	8	14	4	6	14	5	4
	11	15	7	11	15	8	10	15	9	9	15	10	8
1		17	1		17	2		17	3		17	4	
2		34	2		34	4		34	6		34	8	

Length

Length of the Meaſurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
17 1	17 2	17 3	17 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
3	51 3	51 8	51 9	52
4	68 4	68 10	69	69 4
5	85 5	86	86 3	86 8
6	102 6	103 2	103 6	104
7	119 7	120 4	120 9	121 4
8	136 8	137 6	138	138 8
9	153 9	154 8	155 3	156
10	170 10	171 10	172 6	173 4
11	187 11	189	189 9	190 8
12	205	206 2	207	208
13	222 1	223 4	224 3	225 4
14	239 2	240 6	241 6	242 8
15	256 3	257 8	258 9	260
16	273 4	274 10	276	277 4
17	290 5	292	293 3	294 8

f. i.	f. i.	f. i.	f. i.
17 5	17 6	17 7	17 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 10 10	2 11	2 11 2	2 11 4
3	4 4 3	4 4 6	4 4 9	4 5
4	5 9 8	5 10	5 10 4	5 10 8
5	7 3 1	7 3 6	7 3 11	7 4 4
6	8 8 6	8 9	8 9 6	8 10
7	10 1 11	10 2 6	10 3 1	10 3 8
8	11 7 4	11 8	11 8 8	11 9 4
9	13 9	13 1 6	13 2 3	13 3
10	14 6 2	14 7	14 7 10	14 8 8
11	15 11 7	16 6	16 1 5	16 2 4
1	17 5	17 6	17 7	17 8
2	34 10	35	35 2	35 4
3	52 3	52 6	52 9	53
4	69 8	70	70 4	70 8
5	87 1	87 6	87 11	88 4
6	104 6	105	105 6	106
7	121 11	122 6	123 1	123 8

Length

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
17 5	17 6	17 7	17 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
8	139 4	140	140 8	141 4
9	156 9	157 6	158 3	159
10	174 2	175	175 10	176 8
11	191 7	192 6	193 5	194 4
12	209 0	210	211 0	212
13	226 5	227 6	228 7	129 8
14	243 10	245	246 2	247 4
15	261 3	262 6	263 9	265
16	278 8	280	281 4	282 8
17	296 1	297 6	298 11	300 4

f. i.	f. i.	f. i.	f.
17 9	17 10	17 11	18

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	2 11 6	2 11 8	2 11 10	3 0
3	4 5 3	4 5 6	4 5 9	4 6
4	5 11	5 11 4	6 11 8	6 0
5	7 4 9	7 5 2	7 5 7	7 6
6	8 10 6	8 11 0	8 11 6	9 0
7	10 4 3	10 4 10	10 5 5	10 6
8	11 10	11 10 8	12 11 4	12 0
9	13 3 9	13 4 6	14 5 3	13 6
10	14 9 6	14 10 4	15 11 2	15 0
11	16 3 3	16 4 2	17 5 1	16 6
1	17 9	17 10	18 11	18 0
2	35 6	35 8	35 10	36 0
3	53 3	53 6	53 9	54 0
4	71	71 4	71 8	72 0
5	88 9	89 2	89 7	90 0
6	106 6	107 0	107 6	108 0
7	124 3	124 10	125 5	126 0
8	142	142 8	143 4	144 0
9	159 9	160 6	161 11	162 0
10	177 6	178 4	179 10	180 0
11	195 3	196 2	197 9	198 0
12	213	214 0	215 8	216 0

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f.
17 9	17 10	17 11	18

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
13	230 9	231 10	233 7	234 0
14	248 6	249 8	251 6	252 0
15	266 3	267 6	269 5	270 0
16	284 0	285 4	287 4	288 0
17	301 9	303 2	305 3	306 0
18			323 2	324 0

	f. i.	f. i.	f. i.	f. i.
	18 1	18 2	18 3	18 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	3 0 2	3 0 4	3 0 6	3 0 8
3	4 6 3	4 6 6	4 6 9	4 7 0
4	6 0 4	6 0 8	6 1 0	6 1 4
5	7 6 5	7 6 10	7 7 3	7 7 8
6	9 0 6	9 1 0	9 1 6	9 2 0
7	10 6 7	10 7 2	10 7 9	10 8 4
8	12 0 8	12 1 4	12 2 0	12 2 8
9	13 6 9	13 7 6	13 8 3	13 9 0
10	15 0 10	15 1 8	15 2 6	15 3 4
11	16 6 11	16 7 10	16 8 9	16 9 8
1	18 1	18 2	18 3	18 4
2	36 2	36 4	36 6	36 8
3	54 3	54 6	54 9	55 0
4	72 4	72 8	73 0	73 4
5	90 5	90 10	91 3	91 8
6	108 6	109 0	109 6	110 0
7	126 7	127 2	127 9	128 4
8	144 8	145 4	156 0	146 8
9	162 9	163 6	164 3	165 0
10	180 10	181 8	182 6	183 4
11	198 11	199 10	200 9	201 8
12	217 0	218 0	219 0	220 0
13	235 1	236 2	237 3	238 4
14	253 2	254 4	255 6	256 8
15	271 3	272 6	273 9	275 0

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
18 1	18 2	18 3	18 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
16	289 4	290 8	292 0	293 4
17	307 5	308 10	310 3	311 8
18	325 6	327 0	328 6	330 0

f. i.	f. i.	f. i.	f. i.
18 5	18 6	18 7	18 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	3 0 10	3 1 0	3 1 2	3 1 4
3	4 7 3	4 7 6	4 7 9	4 8 0
4	6 1 8	6 2 0	6 2 4	6 2 8
5	7 8 1	7 8 6	7 8 11	7 9 4
6	9 2 6	9 3 0	9 3 6	9 4 0
7	10 9 11	10 9 6	10 10 1	10 10 8
8	12 3 4	12 4 0	12 4 8	12 5 4
9	13 9 9	13 10 6	13 11 3	14 0 0
10	15 4 2	15 5 0	15 5 10	15 6 8
11	16 10 7	16 11 6	17 0 5	17 1 4
1	18 5	18 6	18 7	18 8
2	36 10	37 0	37 2	37 4
3	55 3	55 6	55 9	56 0
4	73 8	74 0	74 4	74 8
5	92 1	92 6	92 11	93 4
6	110 6	111 0	111 6	112 0
7	128 11	129 6	130 1	130 8
8	147 4	148 0	148 8	149 4
9	165 9	166 6	167 3	168 0
10	184 2	184 0	185 10	186 8
11	202 7	203 6	204 5	205 4
12	221 0	222 0	223 0	224 0
13	239 5	240 6	242 7	242 8
14	257 10	259 0	261 2	261 4
15	276 3	277 6	279 9	280 0
16	294 8	296 0	297 4	298 8
17	313 1	314 6	315 11	317 4
18	331 6	333 0	334 6	336 0

Length of the Measurement, in Feet and Inches, being

	f. i.	f. i.	f. i.	f.
	18 9	18 10	18 11	19

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	3 1 6	3 1 8	3 1 10	3 2
3	4 8 8	4 8 6	4 8 9	4 9
4	6 3 0	6 3 4	6 3 8	6 4
5	7 9 9	7 10 2	7 10 7	7 11
6	9 4 6	9 5 0	9 5 6	9 6
7	10 11 3	10 11 10	11 0 5	11 1
8	12 6 0	12 6 8	12 7 4	12 8
9	14 0 9	14 1 6	14 2 3	14 3
10	15 7 6	15 8 4	15 9 2	15 10
11	17 2 3	17 3 2	17 4 1	17 5
1	18 9 0	18 10 0	18 11 0	19 0
2	37 6	37 8	37 10	38 0
3	56 3	56 6	56 9	57 0
4	75 0	75 4	75 8	76 0
5	93 9	94 2	94 7	95 0
6	112 6	113 0	113 6	114 0
7	131 3	131 10	132 5	133 0
8	150 0	150 8	151 4	152 0
9	168 9	169 6	170 3	171 0
10	187 6	188 4	189 2	190 0
11	206 3	207 2	208 1	209 0
12	225 0	226 0	227 0	228 0
13	243 9	244 10	245 11	247 0
14	262 6	263 8	264 10	266 0
15	281 3	282 6	283 9	285 0
16	300 0	301 4	302 8	304 0
17	318 9	320 2	321 7	323 0
18	337 6	339 0	340 6	342 0

	f. i.	f. i.	f. i.	f. i.
	19 1	19 2	19 3	19 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	3 2 2	3 2 4	3 2 6	3 2 8
3	4 9 3	4 9 6	4 9 9	4 10 0
4	6 4 4	6 4 8	6 5 0	6 5 4
5	7 11 5	7 11 10	8 0 3	8 0 8
6	9 6 6	9 7 0	9 7 6	9 8 0
7	11 1 7	11 2 2	11 2 9	11 3 4

Length

Length of the Meaſurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
19 1	19 2	19 3	19 4

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
8	12 8 8	12 9 4	12 10 0	12 10 8
9	14 3 9	14 4 6	14 5 3	14 6 0
10	15 10 10	15 11 8	16 0 6	16 1 4
11	17 5 11	17 6 10	17 7 9	17 8 8
1	19 1	19 2	19 3	19 4
2	38 2	38 4	38 6	38 8
3	57 3	57 6	57 9	58 0
4	76 4	76 8	77 0	77 4
5	95 5	95 10	96 3	96 8
6	114 6	115 0	115 6	116 0
7	133 7	134 2	134 9	135 4
8	152 8	153 4	154 0	154 8
9	171 9	172 6	173 3	174 0
10	190 10	191 8	192 6	193 4
11	209 11	210 10	211 9	212 8
12	229 0	230 0	231 0	232 0
13	248 1	249 2	250 3	251 4
14	267 2	268 4	269 6	270 8
15	286 3	287 6	288 9	290 0
16	305 4	306 8	308 0	309 4
17	324 5	325 10	327 3	328 8
18	343 6	345 0	346 6	348 0
19		364 2	365 9	367 4

f. i.	f. i.	f. i.	f. i.
19 5	19 6	19 7	19 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	3 2 10	3 3 0	3 3 2	3 3 4
3	4 10 3	4 10 6	4 10 9	4 11 0
4	6 5 8	6 6 0	6 6 4	6 6 8
5	8 1 1	8 1 6	8 1 11	8 2 4
6	9 8 6	9 9 0	9 9 6	9 10 0
7	11 3 11	11 4 6	11 5 1	11 5 8
8	12 11 4	13 0 0	13 0 8	13 1 4
9	14 6 9	14 7 6	14 8 3	14 9 0
10	16 2 2	16 3 0	16 3 10	16 4 8

Length

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f. i.
19 5	19 6	19 7	19 8

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
11	17 9 7	17 10 6	17 11 5	18 0 4
1	19 5 0	19 6 0	19 7 0	19 8 0
2	38 10 0	39 0 0	39 2 0	39 4 0
3	58 3 0	58 6 0	58 9 0	59 0 0
4	77 8 0	78 0 0	78 4 0	78 8 0
5	97 1 0	97 6 0	97 11 0	98 4 0
6	116 6 0	117 0 0	117 6 0	118 0 0
7	135 11 0	136 6 0	137 1 0	137 8 0
8	155 4 0	156 0 0	156 8 0	157 4 0
9	174 9 0	175 6 0	176 3 0	177 0 0
10	194 2 0	195 0 0	195 10 0	196 8 0
11	213 7 0	214 6 0	215 5 0	216 4 0
12	233 0 0	234 0 0	235 0 0	236 0 0
13	252 5 0	253 6 0	254 7 0	255 8 0
14	271 10 0	272 0 0	274 2 0	275 4 0
15	291 3 0	291 6 0	293 9 0	295 0 0
16	310 8 0	311 0 0	313 4 0	314 8 0
17	329 1 0	330 6 0	332 11 0	334 4 0
18	348 6 0	350 0 0	352 6 0	354 0 0
19	367 11 0	369 6 0	372 1 0	373 8 0

f. i.	f. i.	f. i.	f.
19 9	19 10	19 11	20

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	3 3 6	3 3 8	3 3 10	3 4 0
3	4 11 3	4 11 6	4 11 9	5 0 0
4	6 7 0	6 7 4	6 7 8	6 8 0
5	8 2 9	8 3 2	8 3 7	8 4 0
6	9 10 6	9 11 0	9 11 6	10 0 0
7	11 6 3	11 6 10	11 7 5	11 8 0
8	13 2 0	13 2 8	13 3 4	13 4 0
9	14 9 9	14 10 6	14 11 3	15 0 0
10	16 5 6	16 6 4	16 7 2	16 8 0
11	18 1 3	18 2 2	18 3 1	18 4 0
	19 9 0	19 10 0	19 11 0	20 0 0

Length

Length of the Measurement, in Feet and Inches, being

f. i.	f. i.	f. i.	f.
19 9	19 10	19 11	20

breadth f. i.	Content f. i. p.	Content f. i. p.	Content f. i. p.	Content f. i. p.
2	39 6 0	39 8 0	39 10 0	40 0 0
3	59 3 0	59 6 0	59 9 0	60 0 0
4	79 0 0	79 4 0	79 8 0	80 0 0
5	98 9 0	99 2 0	99 7 0	100 0 0
6	118 6 0	119 0 0	119 6 0	120 0 0
7	138 3 0	138 10 0	139 5 0	140 0 0
8	158 0 0	158 8 0	159 4 0	160 0 0
9	177 9 0	178 6 0	179 3 0	180 0 0
10	197 6 0	198 4 0	199 2 0	200 0 0
11	217 3 0	218 2 0	219 1 0	220 0 0
12	237 0 0	238 0 0	239 0 0	240 0 0
13	256 9 0	257 10 0	258 11 0	260 0 0
14	276 6 0	277 8 0	278 10 0	280 0 0
15	296 3 0	297 6 0	298 9 0	300 0 0
16	316 0 0	317 4 0	318 8 0	320 0 0
17	335 9 0	337 2 0	338 7 0	340 0 0
18	355 6 0	357 0 0	358 6 0	360 0 0
19	375 3 0	376 10 0	378 5 0	380 0 0
20				400 0 0

Length of the Measurement being

f.	f.	f.	f.	f.
21	22	23	24	25

breadth f. i.	Content f. i.	Content f. i.	Content f. i.	Content f. i.	Content f. i.
2	3 6	3 8	3 10	4	4 2
3	5 3	5 6	5 9	6	6 3
4	7	7 4	7 8	8	8 4
5	8 9	9 2	9 7	10	19 5
6	10 6	11	11 6	12	12 6
7	12 3	12 10	13 5	14	14 7
8	14	14 8	15 4	16	16 8
9	15 9	16 6	17 3	18	18 9
10	17 6	18 4	19 2	20	20 10
11	19 3	20 2	21 1	22	22 11
1	21	22	23	24	25
2	42	44	46	48	50
	63	66	69	72	75

Length of the Measurement being

breadth f. i.	f. 21 Content f. i.	f. 22 Content f. i.	f. 23 Content f. i.	f. 24 Content f. i.	f. 25 Content f. i.
4	84	88	92	96	100
5	105	110	115	120	125
6	126	132	138	144	150
7	147	154	161	168	175
8	168	176	184	192	200
9	189	198	207	216	225
10	210	220	230	240	250
11	231	242	253	264	275
12	252	264	276	288	300
13	273	286	299	312	325
14	294	308	322	336	350
15	315	330	345	360	375
16	336	352	368	384	400
17	357	374	391	408	425
18	378	396	414	432	450
19	399	418	437	456	475
20	420	440	460	480	500

breadth f. i.	f. 26 Content f. i.	f. 27 Content f. i.	f. 28 Content f. i.	f. 29 Content f. i.	f. 30 Content f. i.
2	4 4	4 6	4 8	4 10	5
3	6 6	6 9	7	7 3	7 6
4	8 8	9	9 4	9 8	10
5	10 10	11 3	11 8	12 1	12 6
6	13	13 6	14	14 6	15
7	15 2	15 9	16 4	16 11	17 6
8	17 4	18	18 8	19 4	20
9	19 6	20 3	21	21 9	22 6
10	21 8	22 6	23 4	24 2	25
11	23 10	24 9	25 8	26 7	27 6
1	26	27	28	29	30
2	52	54	56	58	60
3	78	81	84	87	90
4	104	108	112	116	120

Length

Length of the Measurement, being

breadth f. i.	f. 26 Content f. i.	f. 27 Content f. i.	f. 28 Content f. i.	f. 29 Content f. i.	f. 30 Content f. i.
5	130	135	140	145	150
6	156	162	168	174	180
7	182	189	196	203	210
8	208	216	224	232	240
9	234	243	252	261	270
10	260	270	280	290	300
11	286	297	308	319	330
12	312	324	336	348	360
13	338	351	364	377	390
14	364	378	392	406	420
15	390	405	420	435	450
16	416	432	448	464	480
17	442	459	476	493	510
18	468	486	504	522	540
19	494	513	532	551	570
20	520	540	560	580	600
30		810	840	870	900
40		1080	1120	1160	1200
50		1350	1400	1450	1500

breadth f. i.	f. 31 Content f. i.	f. 32 Content f. i.	f. 33 Content f. i.	f. 34 Content f. i.	f. 35 Content f. i.
2	5 2	5 4	5 6	5 8	5 10
3	7 9	8	8 3	8 6	8 9
4	10 4	10 8	11	11 4	11 8
5	12 11	13 4	13 9	14 2	14 7
6	15 6	16	16 6	17	17 6
7	18 1	18 8	19 3	19 10	20 5
8	20 8	21 4	22	22 8	23 4
9	23 3	24	24 9	25 6	26 3
10	25 10	26 8	27 6	28 4	29 2
11	28 5	29 4	30 3	31 2	32 1
1	31	32	33	34	35
2	62	64	66	68	70

Length of the Measurement being

breadth f. i.	f. 31 Content f. i.	f. 32 Content f. i.	f. 33 Content f. i.	f. 34 Content f. i.	f. 35 Content f. i.
3	93	96	99	72	105
4	124	128	132	136	140
5	155	160	165	170	175
6	186	192	198	204	210
7	217	224	231	238	245
8	248	256	264	272	280
9	279	288	297	306	315
10	310	320	330	340	350
11	341	352	363	374	385
12	372	384	396	408	420
13	403	416	429	442	455
14	434	448	462	476	490
15	465	470	495	510	525
16	496	512	528	544	560
17	527	544	561	578	595
18	558	576	594	612	630
19	589	608	627	646	665
20	620	640	660	680	700
30	930	960	990	1020	1050
40	1240	1280	1320	1360	1400
50	1550	1600	1650	1700	1750

breadth f. i.	f. 36 Content f. i.	f. 37 Content f. i.	f. 38 Content f. i.	f. 39 Content f. i.	f. 40 Content f. i.
2	6	6 2	6 4	6 6	6 8
3	9	9 3	9 6	9 9	10
4	12	12 4	12 8	13	13 4
5	15	15 5	15 10	16 3	16 8
6	18	18 6	19	19 6	20
7	21	21 7	22 2	22 9	23 4
8	24	24 8	25 4	26	26 8
9	27	27 9	28 6	29 3	30
10	30	30 10	31 8	32 6	33 4
11	33	33 11	34 10	35 9	36 8

Length of the Measurement being

breadth f. i.	f. 36 Content f. i.	f. 37 Content f. i.	f. 38 Content f. i.	f. 39 Content f. i.	f. 40 Content f. i.
1	36	37	38	39	40
2	72	74	76	78	80
3	108	111	114	117	120
4	144	148	152	156	160
5	180	185	180	195	200
6	216	222	228	234	240
7	252	259	266	273	280
8	288	296	304	312	320
9	324	333	342	351	360
10	360	370	380	390	400
11	396	407	418	429	440
12	432	444	456	468	480
13	468	481	494	507	520
14	504	518	532	546	560
15	540	555	570	585	600
16	576	592	608	624	640
17	612	629	646	663	680
18	648	666	684	702	720
19	684	703	722	741	760
20	720	740	760	780	800
30	1080	1110	1140	1170	1200
40	1446	1480	1520	1560	1600
50	1800	1850	1900	1950	2000

breadth f. i.	f. 41 Content f. i.	f. 42 Content f. i.	f. 43 Content f. i.	f. 44 Content f. i.	f. 45 Content f. i.
2	6 10	7	7 2	7 4	7 6
3	10 3	10 6	10 9	11	11 3
4	13 8	14	14 4	14 8	15
5	17 1	17 6	17 11	18 4	18 9
6	20 6	21	21 6	22	22 6
7	23 11	24 6	25 1	25 8	26 3
8	27 4	28	28 8	29 4	30
9	30 9	31 6	32 3	33	33 9

Length of the Measurement being

breadth f. i.	Content f. i.	Content f. i.	Content f. i.	Content f. i.	Content f. i.
	f. 41	f. 42	f. 43	f. 44	f. 45
10	34 2	35	35 10	36 8	37 6
11	37 7	38 6	39 5	40 4	41 3
1	41	42	43	44	45
2	82	84	86	88	90
3	123	126	129	132	135
4	164	168	172	176	180
5	205	210	215	220	225
6	246	252	258	264	270
7	287	294	301	308	315
8	328	336	344	352	360
9	369	378	387	396	405
10	410	420	430	440	450
11	451	462	473	484	495
12	492	504	516	528	540
13	533	546	559	572	585
14	574	588	602	616	630
15	615	630	645	660	675
16	656	672	688	704	720
17	697	714	731	748	765
18	738	756	774	792	810
19	779	798	817	836	855
20	820	840	860	880	900
30	1230	1260	1290	1320	1350
40	1640	1680	1720	1760	1800
50	2050	2100	2150	2200	2250

breadth f. i.	Content f. i.	Content f. i.	Content f. i.	Content f. i.	Content f. i.
	f. 46	f. 47	f. 48	f. 49	f. 50
2	7 8	7 10	8	8 2	8 4
3	11 6	11 9	12	12 3	12 6
4	15 4	15 8	16	16 4	16 8
5	19 2	19 7	20	20 5	20 10
6	23	23 6	24	24 6	25
7	26 10	27 5	28	28 7	29 2

Length

Length of the Measurement being

breadth f. i.	f. 46 Content f. i.	f. 47 Content f. i.	f. 48 Content f. i.	f. 49 Content f. i.	f. 50 Content f. i.
8	30 8	31 4	32	32 8	33 4
9	34 6	35 3	36	36 9	37 6
10	38 4	39 2	40	40 10	41 8
11	42 2	43 1	44	44 11	45 10
1	46	47	48	49	50
2	92	94	96	98	100
3	138	141	144	147	150
4	168	188	192	196	200
5	230	235	240	245	250
6	276	282	288	294	300
7	322	329	336	343	350
8	368	376	384	392	400
9	414	423	432	441	450
10	460	470	480	490	500
11	506	517	528	539	550
12	552	564	576	588	600
13	598	611	624	637	650
14	644	658	672	686	700
15	690	705	720	735	750
16	736	752	768	784	800
17	782	799	816	833	850
18	828	846	864	882	900
19	874	893	912	931	950
20	920	940	960	980	1000
30	1380	1410	1440	1470	1500
40	1840	1880	1920	1960	2000
50	2300	2350	2400	2450	2500

CHAP. III.

A TABLE of Cubical (or Solid) Meaſure; as Timber, Stone, &c. ready caſt up, from half an Inch, to 36 Inches ſquare at the End, and from 1 Foot to 10 Feet in Length; and, by the Help of Addition only, to any greater Length.

The Length of the Timber, or Stone, in Feet, &c.

Square of the Timber, or Stone, in Inches and half Inches	1		2		3		4		5		6		7		8	
i.	f.	p.	f.	p.	f.	p.	f.	p.	f.	p.	f.	p.	f.	p.	f.	p.
½	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	1
1	0	1	0	1	0	2	0	3	0	3	0	4	0	5	0	5
—	0	2	0	3	0	5	0	6	0	8	0	9	0	11	0	13
2	0	3	0	5	0	8	0	11	0	14	0	17	0	19	0	22
—	0	4	0	8	0	13	0	17	0	21	0	26	0	30	0	34
3	0	6	0	12	0	18	0	25	0	31	0	37	0	43	0	49
—	0	8	0	17	0	25	0	34	0	42	0	51	0	59	0	68
4	0	11	0	22	0	33	0	44	0	55	0	66	0	78	0	89
—	0	14	0	28	0	42	0	56	0	70	0	84	0	98	1	12
5	0	17	0	25	0	52	0	69	0	87	1	4	1	22	1	39
—	0	21	0	42	0	60	0	84	1	5	1	26	1	47	1	68
6	0	25	0	50	0	75	1	80	1	25	1	50	1	55	2	0
—	0	29	0	58	0	88	1	17	1	46	1	76	2	5	2	34
7	0	34	0	68	1	2	1	36	1	70	2	4	2	38	2	72
—	0	39	0	78	1	17	1	56	1	95	2	34	2	73	3	12
8	0	44	0	89	1	33	1	77	2	22	2	66	3	11	3	55
—	0	50	0	90	1	50	2	10	2	51	3	1	3	51	4	1
9	0	56	1	12	1	68	2	25	2	81	3	37	3	93	4	49
—	0	63	1	25	1	88	2	51	3	13	3	76	4	29	5	1
10	0	69	1	39	2	8	2	77	3	47	4	16	4	86	5	55
—	0	76	1	53	2	29	3	6	3	82	4	59	5	35	6	12
11	0	84	1	68	2	52	3	36	4	20	5	4	5	88	6	72
—	0	92	1	84	2	76	3	67	4	59	5	51	6	43	7	35
12	1		2	00	3	0	4	0	5	0	6	0	7	0	8	0
—	1	8	2	17	3	25	4	34	5	42	6	51	7	51	8	68
13	1	17	2	35	3	52	4	69	5	87	7	4	8	22	9	39
—	1	26	2	53	3	80	5	6	6	33	7	59	8	86	10	13
14	1	36	2	72	4	8	5	44	6	80	8	16	9	53	10	89
—	1	46	2	92	4	38	5	84	7	30	8	76	10	22	11	68
15	1	56	3	12	4	68	6	25	7	81	9	37	10	93	12	49
—	1	67	3	33	5	0	6	67	8	89						
16	1	78	3	55	5	33	7	11	9	45						

The Length of the Timber, or Stone, in Feet, &c.

Square of the Timber, or Stone, in Inches and half Inches

i.	9 f.	9 p.	10 f.	10 p.
—	0	2	0	2
1	0	6	0	7
—	0	11	0	16
2	0	25	0	28
—	0	39	0	43
3	0	56	0	62
—	0	76	0	85
4	0	99	1	11
—	1	26	1	40
5	1	56	1	74
—	1	89	2	10
6	2	25	2	50
—	2	64	2	93
7	3	6	3	40
—	3	51	3	90
8	3	99	4	44
—	4	52	5	2
9	5	6	5	62
—	5	64	6	27
10	6	24	6	94
—	6	88	7	65
11	7	56	8	40
—	8	27	9	19
12	9	0	10	0
—	9	76	10	85
13	10	56	11	74
—	11	39	12	66
14	12	25	13	61
—	13	14	14	60
15	14	6	15	62

i.	1 f.	1 p.	2 f.	2 p.	3 f.	3 p.	4 f.	4 p.	5 f.	5 p.
—	1	89	3	78	5	67	7	56	9	45
17	2	1	4	1	6	2	8	3	10	3
—	2	13	4	25	6	38	8	51	10	63
18	2	25	4	50	6	75	9	0	11	25
—	2	38	4	75	6	13	9	51	11	88

Length

The Length of the Timber, or Stone, in Feet.

Square of the Timber, or Stone, in Inches and half Inches

i.	1 f.	1 p.	2 f.	2 p.	3 f.	3 p.	4 f.	4 p.	5 f.	5 p.
19	2	51	5	1	7	52	10	3	12	53
—	2	64	5	28	7	82	10	56	13	20
20	2	78	5	55	8	33	11	11	13	89
—	2	92	5	83	8	75	11	67	14	59
21	3	6	6	13	9	18	12	25	15	31
—	3	21	6	42	9	63	12	84	16	5
22	3	36	6	72	10	8	13	44	17	58
—	3	51	7	3	10	54	14	6	18	36
23	3	67	7	34	11	9	14	69	19	17
—	3	83	7	67	11	50	15	34	20	0
24	4	0	8	0	12	0	16	0	20	83
—	4	16	8	33	12	50	16	66	21	70
25	4	34	8	68	13	2	17	36	22	56
—	4	51	9	2	13	54	18	5	23	47
26	4	69	9	39	14	8	18	77	24	38
—	4	88	9	75	14	63	19	51	25	31
27	5	6	10	12	15	19	20	25	26	25
—	5	25	10	50	15	75	21	0	27	22
28	5	44	10	89	16	33	21	78	28	35
—	5	67	11	33	17	1	21	68	29	20
29	5	84	11	68	17	52	23	36	30	21
—	6	4	12	8	18	10	24	17	31	25
30	6	25	12	50	18	75	25	0	32	30
—	6	46	12	92	19	38	25	84	33	36
31	6	67	13	37	20	2	26	69	34	45
—	6	89	13	78	20	67	27	56	35	55
32	7	11	14	22	21	33	28	44	36	66
—	7	33	14	66	21	99	29	33	37	81
33	7	56	15	12	22	68	30	24	38	90
—	7	78	15	56	23	34	31	12	40	14

i.	6 f.	6 p.	7 f.	7 p.	8 f.	8 p.	9 f.	9 p.	10 f.	10 p.
—	10	1	11	67	13	34	15	1	16	68
16	10	67	12	44	14	22	16	0	17	78
—	11	34	13	24	15	13	17	2	18	91
17	12	4	14	5	16	5	18	6	20	7
—	12	76	14	89	17	1	19	14	21	27
18	13	50	15	75	18	0	20	25	22	50

Length

The Length of the Timber, or Stone, in Feet, &c.

Square of the Timber, or Stone, in Inches and half Inches

i.	6 f.	p.	7 f.	p.	8 f.	p.	9 f.	p.	10 f.	p.
—	14	26	16	64	19	1	21	39	23	77
19	15	4	17	55	20	5	22	56	25	7
—	15	64	18	49	21	13	23	77	26	41
20	16	67	19	40	22	22	25	0	27	78
—	17	51	20	42	23	34	26	26	29	18
21	18	37	21	43	24	49	27	56	30	62
—	19	26	22	47	25	68	28	89	32	10
22	20	16	23	53	26	89	30	25	33	61
—	21	9	24	61	28	13	31	64	35	16
23	22	4	25	71	29	38	33	6	36	73
—	23	1	26	84	30	68	34	51	38	35
24	24	0	28	0	32	0	36	0	40	0
—	24	99	29	16	33	33	37	49	41	66
25	26	4	30	38	34	76	39	2	43	40
—	27	8	31	59	36	10	40	62	45	13
26	28	16	32	86	37	55	42	24	46	94
—	29	25	34	14	39	1	43	89	48	77
27	30	38	35	44	40	50	45	57	50	63
—	31	50	36	75	42	0	47	25	52	50
28	32	67	38	11	43	56	49	0	54	45
—	34	2	39	69	45	36	51	3	56	70
29	35	4	40	88	46	72	52	56	58	40
—	36	26	42	30	48	34	54	39	60	43
30	37	50	43	75	50	0	56	25	62	50
—	38	76	45	22	51	68	58	14	64	60
31	40	4	46	71	53	38	60	6	66	73
—	41	34	48	23	55	12	62	1	68	90
32	42	66	49	78	56	89	63	99	71	11
—	43	99	51	33	58	66	65	99	73	33
33	45	37	52	93	60	49	68	0	75	62
—	46	68	54	46	62	24	70	2	78	80
34	48	17	56	19	64	22	72	25	80	28
—	49	58	57	48	66	10	74	37	82	63
35	51	4	59	55	68	5	76	56	85	7
—	52	50	61	25	70	0	78	75	87	50
36	54	0	63	0	72	0	81	0	90	0

An Explanation of the laſt Table.

This Table conſiſteth of 11 columns; in the firſt whereof, that towards the left hand, having the word inches at the top, or head thereof, beginning with a —, repreſenting half an inch; then the figure 1, which is one inch; then again —, ſignifying half an inch more, and ſo downwards by half inches to 18 inches, ſhewing the ſide of the ſquare of any ſquared timber, or ſtone; and in the other 10 columns, at the heads of them, 1, 2, 3, 4, &c. to 10, they repreſent the length of any timber, tree, ſtone, &c. in feet; ſo that if you find the length of the ſide of the ſquare in inches and half inches in the firſt column, and the length of ſuch timber or ſtone in feet (at the head of the table) in the ſquare, (or meeting of theſe two numbers) you have the content of feet contained in that ſtone or timber, obſerving, that the table begins at half an inch; and ſo continues by half inches to 36 inches, the ſide of the ſquare; and from 1 foot to 10 feet in length, by examples.

EXAMPLE I.

If the ſide of the ſquare, at the end of any timber or ſtone, be 15 inches, and the length thereof 5 feet, how many feet are there in the ſtone, or timber log?

Find 15 inches in the firſt column of the table; and right againſt it, under 5 feet, the length, you ſhall find 7, 81, which is 7 feet and 81 hundred

hundred parts of a foot; for 25 parts is a quarter of a foot; 50 parts, half a foot, and 75 parts three quarters of a foot; ſo that in this ſtone, or timber, there are 7 feet, and above three quarters.

Thus, by feet and inches,

	f.	i.	p.	
Side of the ſquare at the end	1	3		
	1	3		
	1	3		
	0	3	9	
Square of the end	1	6	9	
Multiplied by -			5	length
Feet	7	9	9	anſw.

EXAMPLE II.

If the ſquare of a timber tree be 17 inches and an half, and the length thereof be 9 feet, how many feet are contained therein?

Look for 17 inches and an half in the firſt column; againſt which, in the column of 9 feet, you have 9, 14, that is, 19 feet, and 14 hundred parts of a foot, which is about half a quarter of a foot.

See the work in the following page.

	f.	i.	p.	
Square of the tree	1	5	6	
	1	5	6	
	1	5	6	
		7	3	6
			8	9 0
Cont. of end, ſquar'd, f.	2	1	6	3 0
				9 length
Content	19	1	8	3 0 anſwer

EXAMPLE III.

If a piece of timber, or ſtone, be 30 inches ſquare, and 10 feet long, how many feet are there in that piece?

Find 30 inches, the breadth, in the firſt column; and againſt it, under 10 feet, the length, you will find 62 feet 50 parts; and ſo many feet doth the piece contain.

Square 30 inches
30

Product 900 the end
10 length
12

12)9000(750(62 feet 6 inches
84 72 anſwer
60
60 30
24
9

EXAMPLE IV.

If the ſquare of a timber tree be 27 inches, and the length thereof 18 feet, how many ſolid feet are there in that tree?

Becauſe the table goeth but to 10 feet in length, and this tree is 18 feet long; therefore, as you did before in Board Meaſure, take half the length thereof, which is 9 feet; then finding 27 inches, the ſquare, in the firſt column, and right againſt it, under 9 feet, you will find 45 feet 57 parts; and ſo many feet would the tree have contained, if it had been but 9 feet long; but being 18 feet long, it muſt contain as much more, that is, 91 feet and 14 parts (which is half a quarter of a foot); and thus, if the tree be very long, as 30, 40, 50 feet, &c. you may take ſo many times 10 feet, as there are tenths in its length, and the odd feet by themſelves, and add all together; ſo a timber tree being 31 inches ſquare, and 47 feet long, will be found by this table to contain 313 feet 62 parts, that is, half a quarter above half a foot.

Fourth Example by Feet and Inches.

	f.	i.		
Square of the tree	2	3		
		2	3	
Multiply by Feet	0	6	9	
	4	6		
Product	5	0	9	
			9	times 2 is 18, length
Product by 9	45	6	9	
			2	
Content in feet	91	1	6	anſwer as per table.

The laſt Example.

	f.	i.		
Square of the tree	2	7		
	2	7		
	1	6	1	
	5	2		
ſquar'd, is	6	8	1	
			7	times 6 is 42,
Product by 7	46	8	7	and 5
			6	is 47
Ditto by 42	280	3	6	
	33	4	5	for 5 over
Content	313	7	11	anſwer.

N. B. In the examples beforegoing, we have ſuppoſed the tree or ſtone we meaſured, to carry the ſame ſquare from end to end, throughout the piece; but we ſee, that in all or moſt trees, (eſpecially if they are very long) there is a great difference between the ſquares of each end of the tree; wherefore, Workmen and other Meaſurers do, for the moſt part, make choice of ſome convenient place in the middle of the tree, and take the ſquare thereof for the true (except by chance); therefore, in ſuch timber trees, meaſure the ſquares at both ends, and add the ſides of thoſe two ſquares together, and half that length will be the true ſquare which the tree will carry throughout: thus, If a timber tree have the ſide of the ſquare at the great end, 32 inches, and at the leſſer end, 23 inches, theſe two added together will make 55 inches, the half whereof is 27 inches and an half, and that is the true ſide of the ſquare, with which, and the length by the table, you may find the content, as is before taught.

A TABLE, ſhewing, at one view, the number of Squares contain'd in any number of Feet, from 120 to 890, by inſpection, which, with the help of Addition only, to any higher number required.

No. of feet	ſquares and feet therein ſq.	f.	No. of feet	ſquares and feet therein ſq.	f.	No. of feet	ſquares and feet therein ſq.	f.
120	1	20	380	3	80	640	6	40
130	1	30	390	3	90	650	6	50
140	1	40	400	4		660	6	60
150	1	50	410	4	10	670	6	70
160	1	60	420	4	20	680	6	80
170	1	70	430	4	30	690	6	90
180	1	80	440	4	40	700	7	
190	1	90	450	4	50	710	7	10
200	2		460	4	60	720	7	20
210	2	10	470	4	70	730	7	30
220	2	20	480	4	80	740	7	40
230	2	30	490	4	90	750	7	50
240	2	40	500	5		760	7	60
250	2	50	510	5	10	770	7	70
260	2	60	520	5	20	780	7	80
270	2	70	530	5	30	790	7	90
280	2	80	540	5	40	800	8	
290	2	90	550	5	50	810	8	10
300	3		560	5	60	820	8	20
310	3	10	570	5	70	830	8	30
320	3	20	580	5	80	840	8	40
330	3	30	590	5	90	850	8	50
340	3	40	600	6		860	8	60
350	3	50	610	6	10	870	8	70
360	3	60	620	6	20	880	8	80
370	3	70	630	6	30	890	8	90

The uſe of the above Table is this: Suppoſe your content (after the ſquaring any dimenſions) ſhould be 620 feet, and you were deſirous to know how many ſquares were therein contain'd, look for your number of feet in the table, num-

bers, and oppoſite which, you will find 6 ſquares and 20 feet remaining, which is equal to 1-5th part of one ſquare more: this being ſo eaſy, ſhall think it unneceſſary to give any other example; and notwithſtanding this table is continued no farther than to 890 feet, it may be ſufficient to enable any perſon whatſoever to find the ſquares in any higher numbers, if but duly obſerving the direction given, (together with the examples at large) for finding the ſame at the beginning of this book, which, for memory ſake, ſhall give an example or two in this place, and ſo conclude: thus, Suppoſe then, 3760 feet were given, to find the number of ſquares therein;—cut the two laſt figures, next the right hand, off, with a daſh of your pen or pencil, thus, 37|60, and the figures 37, next the left hand, are the ſquares therein; and the 60, next the right hand, are the remaining feet; and this is all you have to remember, in any number whatſoever required: thus again, ſquares, 1234|56 feet.

A TABLE, ſhewing, at one view, the number of ſquare yards contain'd in any intermediate numbers of feet, from 18 to 1737.

No. of feet	ſq. yds.	No. of feet	ſq yds.	No. of feet	ſq yd	No. of feet	ſq yd
18	2	243	27	468	52	693	77
27	3	252	28	477	53	702	78
36	4	261	29	486	54	711	79
45	5	270	30	495	55	720	80
54	6	279	31	504	56	729	81
63	7	288	32	513	57	738	82
72	8	297	33	522	58	747	83
81	9	306	34	531	59	756	84
90	10	315	35	540	60	765	85
99	11	324	36	549	61	774	86
108	12	333	37	558	62	783	87
117	13	342	38	567	63	792	88
126	14	351	39	576	64	801	89
135	15	360	40	585	65	810	90
144	16	369	41	594	66	819	91
153	17	378	42	603	67	828	92
162	18	387	43	612	68	837	93
171	19	396	44	621	69	846	94
180	20	405	45	630	70	855	95
189	21	414	46	639	71	864	96
198	22	423	47	648	72	873	97
207	23	432	48	657	73	882	98
216	24	441	49	666	74	891	99
225	25	450	50	675	75	900	100
234	26	459	51	684	76	909	101

Note. That on the head of the table, the firſt column is (number of feet); the next is (ſquare yards); the next is, alſo (number of feet); then (ſquare yards), and ſo on to the laſt column on the oppoſite page.

Table continued.

No. of feet	ſq. yds.	No. of feet	ſq. yds.	No. of feet	ſq. yds	No. of feet	ſq. yds.
918	102	1125	125	1332	148	1539	171
927	103	1134	126	1341	149	1548	172
936	104	1143	127	1350	150	1557	173
945	105	1152	128	1359	151	1566	174
954	106	1161	129	1368	152	1575e	175
963	107	1170	130	1373	153	1584	176
972	108	1179	131	1386	154	1593	177
981	109	1188	132	1395	155	1602	178
990	110	1197	133	1404	156	1611	179
999	111	1206	134	1413	157	1620	180
1008 k	112	1215	135	1422	158	1629	181
1017	113	1224	136	1431	159	1638	182
1026	114	1233	137	1440	160	1647	183
1035	115	1242	138	1449	161	1656	184
1044	116	1251	139	1458	162	1665	185
1053	117	1260	140	1467	163	1674	186
1062	118	1269	141	1476	164	1683	187
1071	119	1278	142	1485	165	1692	188
1080	120	1287	143	1494	166	1701	189
1089	121	1296	144	1503	167	1710	190
1098	122	1305	145	1512	168	1719	191
1107	123	1314	146	1521	169	1728	192
1116	124	1323	147	1530	170	1737	193

The Uſe and Explanation of the laſt Table.

EXAMPLE.

Suppoſe the ſquare of any dimenſion in feet be 738, how many yards ſquare are in that number?

Look in the Table, under theſe words (number of Feet), for the neareſt number

thereto (which here, h, you find the exact number); and in the next column of figures, under theſe words at top (number of ſquare yards), oppoſite your ſaid number 738, you will find 82, the ſquare yards therein contain'd.

The Proof by Diviſion.

feet in a ſquare yard 9)738(82 ſquare yards
72
18
18
..

By this example, you may find any number of ſquare yards, not exceeding 1737, the extent of this table; and for any higher numbers, you may, by practice, eaſily find, by doubling any two numbers in the table, ſo as to make your number requir'd, and add the products together, which will give you the true number of ſquare yards therein: one example may be ſufficient, which ſuppoſe 3460 feet ſhould be requir'd, wherein to find the ſquare yards?

Firſt then, I ſeek in the table as above directed, for 1000, or the neareſt number thereto, which here, k, I find 1008; oppoſite which, I find 112 ſquare yards; and whereas, I find my number will admit of 3 times as much, being 3000 and upwards, I triple 1008, which make 3024 feet.

Thus;

Thus, by Addition; then triple the ſquare yards

	1008	112
	1008	112
	1008	112
feet	3024	336 ſquare yards therein

and you will find 336 to be contain'd in 3024 feet; then, by Subtraction, I find the feet remaining thus:

	3460	the given number, feet
	3024	feet collected from the table
Difference	436	or feet wanting

then ſeeking this number in the table, I find the neareſt to be 432; the ſquare yards contain'd in which, I find 48, which being added to

	336
	48
make	384 ſquare yards, and 4 feet over

and ſo many ſquare yards are contained in 3460 feet.

See the proof by Diviſion.

9)3460(384 proof
27
·76
72
40
36
·4

This example may perhaps ſeem difficult, but practice will render it very eaſy.

THE

THE

Gentleman *and* Tradeſman's

COMPLEAT ASSISTANT, *&c.*

PART III.

CHAP. I.

Of Meaſuring Superficies, &c.

IT is very neceſſary for him that intends to be an Artiſt in Meaſuring, (ſuppoſing of what kind ſoever) to begin with ARITHMETIC, as it is the ground-work and foundation of all Arts and Sciences, mathematical; and at leaſt not to be ignorant of the five firſt and principal Rules thereof, viz. Numeration, Addition, Subtraction, Multiplication, and Diviſion, which I hope every perſon that applies himſelf to the ſtudy of this Art, to be ſkilled in; or, if not, I would refer him to BOOKS or MASTERS, thereby to be properly inſtructed.

There

There is alſo a Sixth Rule as neceſſary (if not more) to be underſtood by the learner, which is, the EXTRACTION of the SQUARE ROOT; without which, no perſon can well attain to a competent knowledge in this ART; I ſhall not, therefore, think it unworthy my pains, to ſhew how it may be performed both with eaſe and brevity.

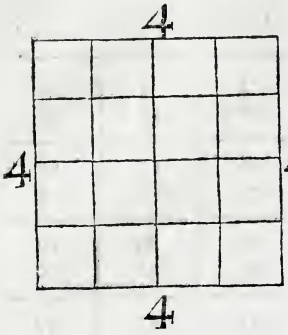
Explanation of the SQUARE ROOT.

To find the Square Root, is to find out of any number propounded, a leſſer number; which ſaid number being multiplied in itſelf, may produce the number propounded.

As for Example:

Suppoſe 81 be a number given to be extracted, I ſay 9 is the root of it; becauſe 9, multiplied in itſelf, viz. 9 times 9 produces 81, the given number; now it may be neceſſary to ſhew, why another figure, as 8 or 10, ſhould not be the ſquare root of 81, as well as 9; which ſuppoſe, for example, 8 were tried, which could not be the root, becauſe 8 times 8 is but 64, which is too little; and 10 times 10 is 100, which is too much; therefore, I ſay, 9 muſt needs be the root, becauſe multiplied in itſelf, makes neither more nor leſs, but juſt the number propounded, or given, to be extracted, viz. 81.

Again,



Again, Suppoſe 16 be the number given, I ſay the root of it is 4, becauſe 4, multiplied in itſelf, makes 16, which, for your better underſtanding, ſee the figure, being a great ſquare, containing 16 little ſquares; any ſide of which great ſquare, contain 4 little ſquares, which is call'd the Square Root.

Or ſuppoſe a plain ſquare figure be given you, as in the margin, and it be required of you to divide it into 9 ſmall ſquares, your buſineſs is to know, into how many parts to divide any one of the ſide lines, which here muſt be into 3, and that is the Root required: but how to do this with eaſe and expedition, in any number given to be ſo extracted, is what I ſhall, in the next place, explain to the meaneſt capacity.

The roots of all ſquare numbers under 144, you have in your Multiplication table; but for the greater convenience of all young Arithmeticians, and others, not acquainted with the general Rule or Method of extracting the Square Root, I have calculated a Table, in which the Roots of all given ſquare numbers, regularly ariſing from 1 to 10000, are already extracted, and alſo prefixed to each reſpective number thereunto belonging, as here follows:

The TABLE.

Roots	1	2	3	4	5	6
Squares	1	4	9 c	16 d	25 e	36
Roots	13	14	15	16	17	18
Squares	169 g	196	225	256	289	324
Roots	25	26	27	28	29	30
Squares	625	676	729	784	841	900
Roots	37	38	39	40	41	42
Squares	1369	1444 a	1521	1600	1681	1764
Roots	49	50	51	52	53	54
Squares	2401	2500	2601	2704	2809	2916
Roots	61	62	63	64	65	66
Squares	1721	3844	3969	4096	4225	4356
Roots	73	74	75	76	77	78
Squares	5329	5476	5625	5776	5929	6084

Table continued.

Roots	7	8	9	10	11	12
Squares	49	64	81	100	121	144
Roots	19	20	21	22	23	24 f
Squares	361	400	441	484	529	576
Roots	31	32	33	34	35	36
Squares	961	1024	1089	1156	1225	1296 b
Roots	43	44	45	46	47	48
Squares	1849	1936	2025	2116	2209	2304
Roots	55	56	57	58	59	60
Squares	3025	3136	3249	3364	3481	3600
Roots	67	68	69	70	71	72
Squares	4489	4624	4761	4900	5041	5184
Roots	79	80	81	82	83	84
Squares	6241	6400	6561	6724	6889	7056

The

The Table concluded.

Roots	85	86	87	88	89	90	91
Squares	7225	7396	7569	7744	7921	8100	8281
Roots	92	93	94	95	96	97	98
Squares	8464	8549	8836	9025	9216	9409	9604
Roots	99	100					
Squares	9801	10000					

Explanation of the above Table.

Suppoſe the number given to find the ſquare root of, be 1444; ſeek for the number in the table, in the line of figures, facing, or oppoſite the word ſquares (looking croſs-ways the book); and when you have found the ſaid number (or neareſt thereto not exceeding), you will find the root for ſuch number, in the very next ſquare, exactly above it, as here, a, you find the exact number 1444 given, and its root above it, 38, in the line of roots. This example may be ſufficient to inſtruct any perſon how to find the root, in all ſuch number of ſquares as fall within compaſs of this table; but whereas it will happen, that ſometimes the number given to find the ſquare root of, cannot be exactly found in the table, it will be neceſſary to give the reader an example thereof; which ſuppoſe it were required to extract the ſquare root of 1320, which ſaid number is not to be found exactly in the table, therefore you muſt ſeek for the neareſt, not exceeding, which b, here, you find to be 1296, the root of which is 36; but whereas a ſmall value is here loſt in the remainder, it will be

neceſſary to obſerve the following method to obtain it, thus, find the deficiency by Subtraction, thus:

the given number is	1320	
the neareſt number is	1296	as per table
the number deficient	··24	or difference

now to find the value of this difference remaining, obſerve the following rule: Subtract the table, number 1296, from the next ſucceeding number, which is 1369, and the difference is equal to a unit, or 1, in the root, thus,

	1369	
	1296	
difference	··73	equal to a unit, or 1;

therefore, the deficient number, 24, as above, being compared therewith, or divided thus,

24)73(3 equal 1-3d.
72

1

gives 1-3d. of a unit more, to be added to the root, ſo that 36 1-3d. is the ſquare root of 1320; which ſuppoſe were feet, the ſquare root would be 36 feet, 4 inches, equal to 1-3d. of an integer, which here is 1 foot.

This laſt example is worthy of due obſervation, as all thoſe unequal numbers, which cannot be exactly obtained by the table, will admit of ſome remainders, which by this method, the value thereof may be obtained to the neareſt truth;

truth; and though perhaps it may to thoſe (rather deficient in the uſe of figures) ſeem difficult, yet a little practice, with due obſervation, will render it very eaſy.

As to thoſe already acquainted with the method of extracting the Square Root arithmetically, it is done with pleaſure; but to attempt explaining it in this place, to thoſe deficient, it would only be rather confounding them, than otherwiſe, therefore ſhall refer them to the uſe of the table, which I have calculated chiefly for their convenience; and by which (with the examples juſt mentioned) they may be enabled to find the root of almoſt any number required, in the common way of buſineſs. See the proof of the laſt queſtion, in the ſquare root.

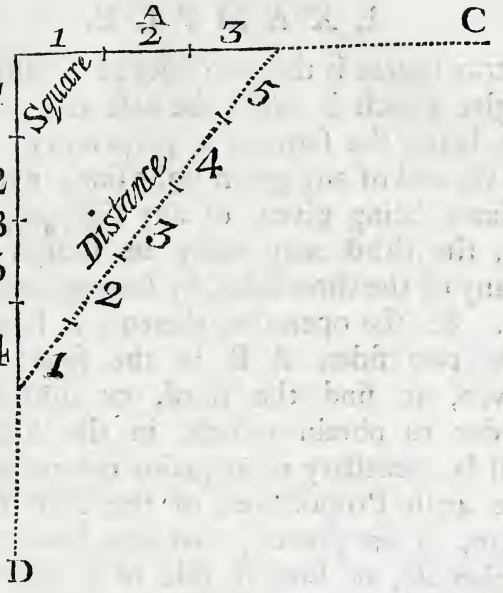
EXAMPLE.

Let it be required to extract the ſquare root of 1320 feet, the value of the root being alſo demanded?

```
                f.
      1320(36,34
       9..     12
     ----    ----
    66)420   4,08 inches
       396   ----
     -----
   723)2400                f. i.
       2169      anſwer  36,4
     -------
  7264) 3100
        3056
       -----
          44
```

Explanation of the Artificer's Square, and how to make it with the greateſt eaſe and exactneſs, to any ſize required.

After you have fitted yourſelf with a piece of good, ſound, well-ſeaſoned wainſcot, &c. fit for your uſe, cut the ſame, to the length you intend to have your ſquare; then divide one ſide into three equal parts, and the other into four, with the ſame extent, (the two pieces firſt being fitted for joining together, at pleaſure) fix them, according to your eye, as near a ſquare as you can; then, with the ſame extent of your compaſſes you divided them with into equal parts, meaſure the diſtance between the greateſt extremity of their legs, viz. from 3 to 4, in the figure hereof, making it exactly five of thoſe parts; which being done, be careful then to join your ſquare together, without the leaſt alteration or moving, you may depend your ſquare is perfectly true. See the figure thereof, repreſented by the two lines A and B.



And here you are to underſtand, that you may make your Square what ſize you pleaſe, only obſerving this rule; that after dividing the two ſides into equal parts, as above, the diſtance from the 3d diviſion on one ſide, as on A, and the 4th on the other, as on B, meaſure juſt 5 of the ſame diviſions; then you may afterwards extend the ſides of your ſquare, to what length you pleaſe, as in the above figure is deſcribed, by the pricked lines from A and B, extending to C and D.

How to prove the above Square by the Square Root; with ſeveral other neceſſary examples, for the learner's more clear comprehenſion of that moſt uſeful part of Geometry.

EXAM-

EXAMPLE.

A true ſquare is the two ſides of a right angled triangle, which is call'd the baſe and perpendicular, being the ſame as a perpendicular rais'd upon the end of any given right line; which ſaid two lines, being given, of any right angled triangle, the third may eaſily be found, and ſo may any of the three ſides, by having two thereof given. See the operation thereof, at large.

The two ſides, A B, in the ſquare above, is given, to find the third, or dotted line; in order to obtain which, in the firſt place it will be neceſſary to acquaint the reader, that in the 47th Propoſition, of the Firſt Book of EUCLID, it is proved, that the ſquare of the hypothenuſe, or longeſt ſide of a right angled triangle, is equal to the ſum of the ſquares of the baſe and perpendicular, or the other two ſides; therefore, the perpendicular, or ſide of the ſquare A, here given, I ſhall ſay is 3 feet, and the baſe B, the other ſide, being 4 feet, I demand the length of the other ſide?

Firſt, according to the rule given, ſquare the ſides, thus,

3 times 3 is	9	ſq. of the perpend.
then, 4 times 4 is	16	ſquare of the baſe
which added together, is	25	

therefore the ſquare root of 25, is 5, as you will find in the table marked e, the length of the other ſide required (being the dotted line, or diſtance between the legs of the ſquare).

Again,

Again, ſuppoſe this ſide, and the other ſide, B, were given to find A, thus; the hypothenuſe, or longeſt ſide here laſt found, is 5 feet, and the perpendicular B, 4 feet, I demand the ſide A, thus,

hypothenuſe 5, ſquar'd, is 25
perpendic. 4, ſquar'd, is 16

ſubtracted, is 9 the difference;

the ſquare root of which, as per table, is 3 c, the ſide required.

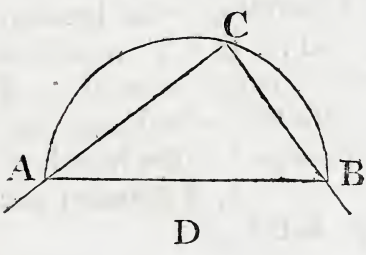
Laſtly, ſuppoſe the hypothenuſe, or longeſt ſide, and the perpendicular ſide A, to be given to find the baſe, or ſide B, thus,

The hypothenuſe is 5, the ſquare whereof is 25
The perpendic. is 3, the ſquare whereof is 9

Which being ſubtracted, the difference is 16

the ſquare root of which, as per table at d, is 4, the length requir'd.

By another method.



Firſt, draw a right line, as A B, which divide into two equal parts, in the point D; and upon D, with the diſtance B D, deſcribe the ſemi-circle A C B; ſecondly, in any point of the circumference thereof, make a point, as at C; from which point, two right lines being drawn to A and B, they ſhall conſtitute a ſquare, or right-angle, at the point C; and ſo two pieces of wood, being framed together, ſhall be a true ſquare.

Note, So much, then, I preſume, may be ſufficient to qualify the learner, to find the three

ſides ſeverally belonging to any right angled triangles, being the moſt curious propoſition relating to Geometry; and what too few perſons, amongſt the Mechanics, are acquainted with; notwithſtanding, being ſenſible of its great utility in the ſeveral branches of trade.

It may be neceſſary, in the next place, to acquaint the reader, that in reſpect to the above doctrine of a right angled triangle, that when once he is clear in the comprehenſion thereof, he will be qualified to find the length of the hip-rafter belonging the off-ſet of any building whatſoever, whether the roof be of ſquare, bevil, or flat pitch, as I ſhall hereafter explain, by fig. 1. plate 1.

EXAMPLE.

Let C E, repreſent the length; and E H, or C G, the breadth of a building, the breadth thereof being 24 feet; and let D B T, repreſent the principal rafters, whoſe length thereof is 18 feet, or 3-4ths of the width of the building, (being true pitch'd) and alſo equal to the length of the ſide of the gable end, C A, I demand the length of the corner hip, E B?

In order to perform which, obſerve this general rule:

That the ſquare of the principal rafter, added to the ſquare of the diſtance, from the foot thereof, to the corner of the building (equal to half the width of the houſe), the ſquare root of that product will be equal to the length of the hip-rafter. See the following example.

EXAM-

Fig 1

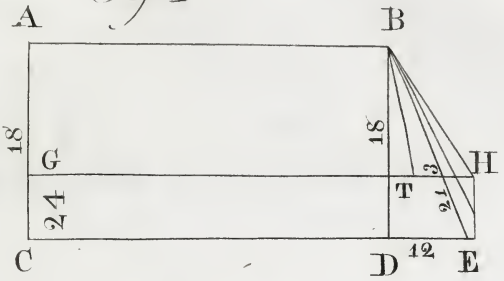


Fig 2

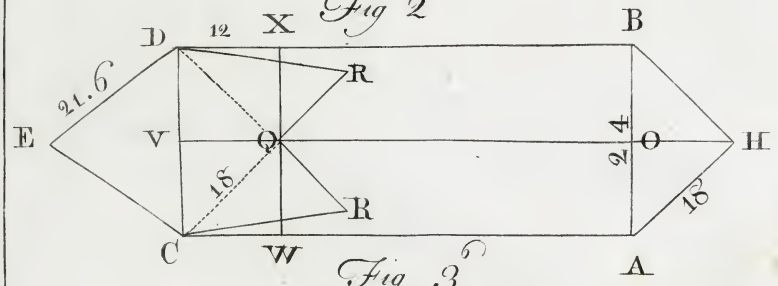
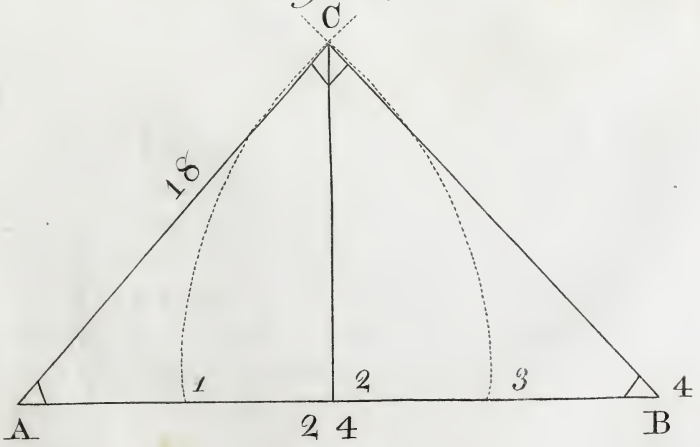


Fig 3.



EXAMPLE.

Half the width of the building, D E, is 12 feet, the ſquare thereof is 144.

thus, 12
by 12
144

Then the length of the principal rafter, D B, is 18, the ſquare thereof is 324.

thus, 18
by 18
144
18
324 ſquare of the principal rafter
to which add the above 144 ſquare of half the width
the ſum extracted 468,00(21,6 length of the hip, as req.
4
41)·68
41
426)2700
2556
·144

Note, You may find the root of 468, in the ſquare root table aforegoing, (or the neareſt number thereto) which is 441, the root of which is 21; the length of the hip, as above; as for the 6 tenths over and above (the value of which, is ſomewhat more than 7 inches), you may find by the explanation of the table, as directed.

To find the length of the hip, inſtrumentally.

Example. Fig. 2, Plate 1.

Firſt, from a ſcale of equal parts, lay down the length and breadth of your intended building, repreſented in the plate, by the figure A B C D, (one end being to be hipped, and the other a gable end) drawing the lines A B C D, the length and breadth of the roof; which ſaid breadth C D or A B, to be 24; then draw the gable end A H B, whoſe ſides A H and B H, are each equal in length to 3-4ths of the width 24, which will be 18 (the building being true pitch'd), then draw the perpendicular line O H, the height of the gable end (which line is of general uſe to level the ridge of all roofs); and if the other end be hipped, as in the deſign C D E, then it ſerves to find the length and back of the hip, ſo that it may anſwer both ſides and end of the roof; always obſerving, that the middle of the breadth of the houſe is as O V; next, draw the line W X through the center Q, which will make right angles to the line O V (both in ſquare and bevil houſes), the length of the rafter being equal to A H or B H, the two ſides of the gable end in 18; laſtly, draw the line Q O, which is the length of the ridge; then to find the length of the hip, draw the diagonal lines, C Q and Q D (over which the hip is to hang when in its due place); then take the perpendicular line O H, and place it from the point Q to the point R R, the one perpendicular to the diagonal (or baſe line) C Q, and

the

the other to Q D, ſo is Q R and Q R, the pitch of the hip, equal to the gable end O H; and when erected, will hang perpendicular to the point Q; then take the line C R and R D, placing them from C to E, and from D to C, and it gives the length of the hip C E D; which being applied to your ſcale of equal parts, will meaſure 21, and 7-twelfths, equal to 21,6, as in the former example, arithmetically.

Of a Roof. Fig. 3, Plate 1.

This roof is a proper pitch for covering with plain tiles. To find the perpendicular height, divide the breadth of the building into 4 parts, and take 3 of thoſe parts for the length of the rafter, which will interſect in C, the perpendicular height; this is called true (or common) pitch, being the moſt in uſe.

In the next place, ſhall think it not unneceſſay to give two or three examples in the Square Root, by way of amuſement.

QUESTION I.

If the content of a circle be 169, what is the ſide of a ſquare, equal in area, to the given circle?

EXAMPLE.

Look for the above number 169, in the ſquare root table, and the root thereof is the ſide of a ſquare, equal in area to the given circle, which here, at g, you will find 13; the anſwer required.

QUE-

QUESTION II.

A certain number of men, ſpent at a reckoning, the ſum of 14 *l.* 8 *s.* and every man paid as many ſixpences, as there were men in company; how many were there?

EXAMPLE.

Bring the money into ſixpences,

	l.	*s.*	
thus,	14	8	
	20		
	288		ſhillings
multiply by	2		ſixpences is 1 ſhilling
	576		number of ſixpences

Seek this number in the table, and the root thereof is the number of men, which here, ſ, you find is 24; the number required.

N. B. That various queſtions, of the like nature, may be ſolved with eaſe and pleaſure, which the learner may practice at his convenience.

CHAP. II.

Of GEOMETRICAL DEFINITIONS.

A Point is that which hath neither length nor breadth; the leaſt thing which can be imagined, and which cannot be divided, commonly marked as a full ſtop, in writing, thus, (.)

A line has length, but no breadth nor thickneſs, and is made by many points joined together in length, of which there are two ſorts, viz. ſtreight, and crooked, as A B, fig. 1. plate 2. is a ſtreight line, and B C, fig. 2. two crooked lines.

An angle, is the meeting of two lines in a point, provided the two lines ſo meeting, do not make one ſtreight line, as the line A B, fig. 3. and the line A C, meeting together in the point A, make the angle B A C.

Of which right lined angles, there are three ſorts, viz. right angled, acute, and obtuſe; when a line falleth perpendicularly upon another line, it maketh two right angles, as fig. 4.

EXAMPLE.

Let C A B be a right line, D A a perpendicular to it, that is to ſay, neither leaning towards B or C, but exactly upright; then are both the angles at A, viz. D A B and D A C, right angles, and contain each juſt 90 degrees, or the fourth part of a circle; but if the line D A had not been perpendicular, but had leaned towards B; then had D A C been an obtuſe, or greater than a right angle, and D A B an acute angle, or leſſer than a right angle, as you ſee hereafter, fig. 5.

All figures contain'd under three ſides, are called triangles, as A B C, fig. 6, 7, and 8.

Where note, the triangle A, hath three equal ſides, and is called, an equalateral triangle.

The triangle B, hath two ſides equal, and the third unequal, and is called, an iſoſceles triangle.

The triangle C, hath three unequal ſides, and is called a Scalenum.

Of Four-Sided Figures, there are theſe ſorts, viz. Firſt, a ſquare, whoſe ſides are all equal, and angles right, as A, fig. 9.

Secondly, A long ſquare, or parallogram, whoſe oppoſite ſides are equal, and angles right, as B, fig. 10.

Thirdly, a rhombus, whoſe ſides are all equal, but no angle right, as C, fig. 11.

Fourthly, a rhomboides, whoſe oppoſite ſides only are equal, and no right angles, as D, fig. 12. All other four-ſided figures, are called trapezias, as E, fig. 13, &c.

There are alſo ſeveral other figures contain'd under 5, 6, 7, or more ſides, which may be called, irregular, excepting ſuch as are made by dividing the circumference of a circle into any number of parts; for then they are regular figures, having all their ſides and angles equal, and are called, according to the number of right lines the circle is divided into; or, more properly, according to the number of angles they contain, as a Pentagon, Hexagon, Heptagon, Octagon, &c. which, to explain in Engliſh, is no more than a figure of 5, 6, 7, or 8 angles; which angles are all equal one to another, and their ſides conſequently all of the ſame length; and thus (though I mention no more than 8) the circumference of the circle may be divided into as many parts as you pleaſe; and the regular figures, ariſing out of ſuch diviſions, are called according to the number of parts the circle is divided

divided into; which, for your better underſtanding, ſee the following table and figures in the plate.

Of a Circle, as Fig. 15.

A circle, is a figure determined with one endleſs line, as A, which line is called the circumference of the circle, in the middle whereof is a prick, or point, by which the circle is deſcribed, which is called the center; from which point, or center, all ſtreight lines drawn to the circumference E, are equal, or of the ſame length as A B, A C, A D.

The diameter of a circle, is a line which paſſeth through the center, cuts the circle into two equal parts, or the longeſt ſtreight line that can be made in any circle; as B C, the ſemi-diameter, is the half of the abovementioned line, as A B, A C, A D, either of which is called a ſemi-diameter.

A chord, is any line ſhorter than the diameter, which paſſeth from one part of the circumference to another, as E F, fig. 14.

A ſemi-circle is the half of a circle, as B D C, or B E C.

A quadrant is the fourth part of a circle, made by two diameters, perpendicularly interſecting each other, as A B D, A D C, A B E, A E C, either of which is a quadrant, or the fourth part of a circle.

A ſection-ſegment, or part of a circle, is the piece of the circle cut off by a chord line, and is greater or leſſer than a ſemi-circle, as E C F G

is a ſegment of the circle E B D C G, and likewiſe E B D C F, is the greater ſegment of the ſame circle.

A ſuperficies, is that which hath both length and breadth, but no thickneſs, whoſe bounds are lines; as A is a ſuperficies, or plain, contained in theſe lines B C, D E, B D, C E, which hath length from B to C, and breadth from B to D, but no thickneſs; obſerve the paralellogram, fig. 16. When theſe bounding-lines are meaſured, and the content of the ſuperficies caſt up, the reſult is called the area, or ſuperficial content of that figure.

EXAMPLE.

Suppoſe the ſaid figure to be a ſuperficies, whoſe length A———C is 12 feet, and breadth A
| 4 feet; theſe multiplied together, make 48 feet; D
therefore, I ſay, 48 ſquare feet is the area, or ſuperficial content of the ſaid figure.

N. B. If to either the length or breadth of the above, there had been any inches, then it would (and always will) require Croſs-Multiplication to find the content.

When two lines are in every part equally diſtant from each other, they are called parallel lines, as the lines A C and B D, under fig. 16, which, tho' produced to ever ſo great a length, would come no nearer to each other, much leſs meet.

A diagonal line, is a line running through a ſquare figure, dividing it into two triangles; beginning at one angle of the ſquare, and proceeding to the oppoſite angle.

CHAP. III.

Geometrical Problems.

Problem 1. Fig. 17.

How to raiſe a perpendicular upon the end of a given line.

A B, is the line here given; and at B, it is required to erect a perpendicular B C; open your compaſſes to an ordinary extent, and ſetting one foot in the point B, let the other fall at adventure, no matter where, in reaſon, as at the point ⊙; then, without altering the extent of the compaſſes, ſet one foot in the point ⊙, and with the other, croſs the line A B, as at D; alſo, on the other ſide, deſcribe the arch E; then laying your ruler to D and ⊙, draw the dotted line D ⊙ F; laſtly, from the point B, you began at, through the interſection at G, draw the line B, G C, which is perpendicular to A B.

N. B. There are ſeveral other ways to perform the above; but, in my opinion, this is the moſt eaſy for practice.

Problem 2. Fig. 18.

Let A B, be the given line; C, the point through which the parallel line muſt paſs: ſet one foot of your compaſſes in C, and cloſing them, ſo that the other will juſt touch the line A B, deſcribe the arch a a; with the ſame extent, in any part of the given line, ſet one foot, and deſcribe another arch, as at D; then, through the aſſign'd point, and the outmoſt convex of the laſt arch, draw the required line C D, which is parallel to A B, and paſſeth through the point C, as required.

Problem 3. Fig. 19.

A right line, as A B, given to make therewith a true geometrical ſquare.

EXAMPLE.

Upon one end thereof, as at B, erect the perpendicular B C, of the ſame length with A B, and with that diſtance, fixing one foot of the compaſſes in C and A, draw two ſmall arches, croſſing each other in the point D; join A D and C D with right angles, and they will conſtitute the ſquare required.

Problem 4. Fig. 30.

Any right line being given to form or make a rhombus, or oblique-angled parallellogram.

EXAMPLE.

This figure is no other than two equilateral triangles, joined baſe to baſe, as the pricked lines

c d plainly ſhews, and might be made or deſcribed after the ſame manner (viz. by Prob. 8); or thus, make the given line, radius, or 90, thus A, and on each end thereof, deſcribe an arch; which being continued, till it meet with the other arch in the points a and b, ſhall give you the length of the rhombus ſought; and if you divide the two arches in the middle, which is done with the ſame radius, it will help you to the breadth thereof, viz. c d; and thus have we found four points, from which, drawing right-lines, they will compleat the figure required.

Problem 5. Fig. 31.

To deſcribe a circle, that ſhall paſs through any three points, not laying in a right line, as A B C.

EXAMPLE.

Join the points B A and B C with right lines; then biſect or divide thoſe lines in the middle, and continue to draw the biſecting line till they meet each other; ſo ſhall the point of interſection D, give you the center of the circle required.

Hence 'tis eaſy to find the center of any given circle, if three points be taken any where in the circumference; or by having a ſegment, or part of any circle, to compleat or deſcribe the whole.

Problem 6. Fig. 32.

How to divide a circle into any number of equal parts, not exceeding twelve; or otherwiſe, how

how to make the figures, called, Pentagon, Hexagon, Heptagon, Octagon, Eneagon, Decagon, Endecagon, and Dodecagon; which, for better underſtanding to the learner, ſhall explain the nature thereof, as follows, viz.

If the figure conſiſts of	5	equal ſides and angles, it is called a regular	Pentagon
	6		Hexagon
	7		Heptagon
	8		Octagon
	9		Eneagon
	10		Decagon
	11		Endecagon
	12		Dodecagon

Problem 7. Fig. 32.

To make a Pentagon, or five-ſided figure.

Draw firſt an obſcure circle, as A B C M; then draw a diameter from A to B; make another diameter perpendicular to the firſt, as C M; then, taking with your compaſſes the length of the ſemi-diameter, ſet one point in A, and make the marks E F, drawing a line between them, as you did to make the triangle; next, ſet one point of your compaſſes in the interſection at g, and extend the other to C, draw the arch C H, the neareſt diſtance between C and H, viz. the line C I H, is the ſide of a pentagon, and the greateſt that can be made within that circle, which, with the ſame extent of your compaſſes, you may mark out round the circle, and drawing lines, the figure will be finiſhed.

Note, The ſemi-diameter of any circle, is the ſide of the greateſt hexagon that can be made within a circle.

Problem 8. Fig. 24.

How to make a Hexagon.

Draw an obſcure circle, as in the laſt figure e e; and then, without altering the extent of the compaſſes, mark out the hexagon required, round the circle; for the ſemi-diameter of any circle, is the ſide of the greateſt hexagon that can be made within a circle. This is the way Coopers uſe, to make heads for their caſks.

Problem 9. Fig. 33.

To make an Eneagon.

Firſt, make a circle, and a triangle in it, as you were taught at the beginning of this problem; then, divide one third part of the circle into three equal parts; as for example: A B, 1, 2, 3; laſtly, draw the lines A, 1, 2, 3; B the ſame, and C alſo, for each of which is the ſide of the eneagon required.

Problem 10.

To make a Decagon, or ten-ſided Figure, you muſt work altogether, as you did in making a pentagon as before; where half the diſtance from the center K, to the point at H, is the ſide of a decagon.

Problem 11. Fig. 34.

How to make an Ellipſis, or Oval, ſeveral ways.

EXAMPLE.

Make three circles, whoſe diameters may be in a ſtreight line, as A B; croſs that line with

another perpendicular to it, at the center of the middle circle, as c d, draw the lines c e, c h, d g, d f; ſet one foot of the compaſſes in D, and extend the other to g, deſcribing the part of the oval, or ellipſis, g f, with the ſame extent, ſetting one foot in c, deſcribe the other part h e; the two ends are made by parts of the two outermoſt ſmall circles, as you ſee f e, g h.

Problem 12. Fig. 35.

This Ellipſis is to be made, having length and and breadth both given, let A B be the length, C D the breadth, of a required oval.

Firſt, lay down the line A B, equal to the given length, and croſs it in the middle with the perpendicular C D, equal to the given breadth. Secondly, take in half the line A B with your compaſſes, viz. A E or B E, ſet one foot in C, and make two marks upon the line A B, viz, f and g; alſo, with the ſame extent, ſet one foot in D, and croſs the former marks at f and g. Thirdly, at the points f and g, fix two pins; or, if it be a garden-plat, or the like, two ſtrong ſticks; then putting a line about them, make faſt the ends at ſuch an exact length, that ſtretching by the two pins, the bent of the line may exactly touch A or B, or C, or D, or h, as in this diagram it does at h; ſo moving the line ſtill round, it will deſcribe an exact oval.

Menſu-

Menſuration of Superficies.

CHAP. IV.

SUperficial figures, are all ſuch as have only length and breadth, without any conſiderable thickneſs, as fig. 11, in the following plate, called a parallelogram, or long ſquare, which, to find the true content thereof, this is the rule:

Multiply the length by the breadth, and the product is the ſuperficial content, either of a parallellogram, or a ſquare figure of four equal ſides, as fig. 11.

EXAMPLE.

Suppoſe the length be

feet	5	6	inches
and breadth		2	4 inches
	1	10	0
	11	0	
content in feet	12	10	0

To meaſure a Triangle, as Fig. 6, 7, or 8.

Rule,

Multiply the longeſt ſide (which is uſually called the baſe) by half the perpendicular; let fall from the angle, oppoſite to the baſe, and the product is the anſwer.

EXAMPLE.

Suppose the longest side, or base, be

	f.	i.
	10	6
half the perpendicular		4 9
	7	10 6
	42	0
content in feet	49	10 6

Note, That in triangles, such as fig. 6 and 7, the perpendicular must be let fall from the angle at A and B, to the base.

To measure a Trapezium, as Fig. 13.

First, draw the diagonal, or base line, BC, which divides the trapezium into two triangles, viz. BAC and BDC; next, draw a diagonal line from A to D, crossing the base line BC, in the point F, which said line give you the two perpendiculars, viz. AF, the greater triangle, and FD, to the lesser triangle; then proceed to measure the two triangles, according to the former directions, and add the two products together, and that product is the content of the whole traperium.

EXAM-

EXAMPLE.

In triangle B A C, the base is	16.6
and perpendicular, 10.10 (half of which, is) - - - - -	5.5
	830
	830
content	91.30
In the triangle, B D C, the base as before, is - - - - -	16.6
and the perpendicular, F D, is 4, the half of which, is	2
content	33 2
to which add the former - -	91.30
and the product is - - -	124.50

the content of the trapezium, as required.

Or by this method,

Add the two perpendiculars together, viz. 10.10 and 4, and their sum is,	14.10
which, multiplied by half the base	8. 3
	450
	1200
and the product (as above) is	124.50

the content of the traperium.

Note, These two methods being perform'd by Decimals, shall give one example more, after the manner of feet and inches.

Thus,

	f.	i.	
the baſe is	16	6	
half the perpendic. added, is		7	5
	6	10	6
	115	6	
the content in feet	122	4	6

Note, If you eſteem the decimal parts of a foot to be inches (as in the above example), the content is only 122 feet, 4 inches, and 6 parts.

To find the Area, or content of a Pentagon, Hexagon, Heptagon, Octagon,, &c. as fig. 32.

RULE.

From the center K, draw the lines F and L, obſerving that K M is the perpendicular.—— Meaſure the triangle K F L, as before is taught, and the product, multiplied by 5, is the content of the pentagon; and according to the number of the ſides of any figure, as above, you may find the content thereof.

EXAMPLE.

The perpendicular, K M, is	18	the baſe, F L, 20
The half baſe, F M, or M L, is	10	
The content of the triangle, is	180	which multiplied
By the number of ſides	5	is
The content of the pentagon	900	as required;

and by this method, all thoſe figures expreſs'd in the table aforegoing, of whatſoever number of ſides, may be meaſured.

The diameter of a circle being given to find the circumference thereof, arithmetically, as fig. 14.

Rule,

As 7 is to 22, so is the diameter to the circumference; thus, by the Rule of Three.

Suppose the diameter be 14, what is the circumference of that circle?

Thus,

As 7 : 22 : : 14 the diameter to

```
   14
  ----
   88
   22
  ----
7)308(44 circumference required.
   28
  ----
   28
   28
  ----
   ..
  ----
```

Fig. 14.

The diameter (of a circle) and the circumference, being given to find the area, or superficial content.

Rule.

Multiply half the diameter by half the circumference, and the product thereof shews the content of any circle; or, multiply the whole circumference by the semi, (or half) diameter, and half that product is the content.

Having

Having only the diameter of a circle given to find the content, this is the Rule:

Say, as 7 is to 22, ſo is the ſquare of the ſemi-diameter to the content of the circle.

The ſemi-diameter is half of 14
the diameter, viz. 7
7

Then ſay, as : 22 : : 49 the ſquare to
49
198
88
7)1078(154 content required
7
37
35
28
28

Having the circumference given to find the content.

Rule,

As 88 (being 4 times 22) is to 7, ſo is the ſquare of the circumference to the content.

The circumference is 44 as before
the ſquare of which, 44

176
176

is 1936 ſq. of circumf.

Then ſay, as 88 : 7 : : 1936 ditto
7

diviſor 88) 13552) 154 content req.
88

475
440

352
352

...

The content of a circle being given to find the diameter.

Rule,

As 22 is to 28, ſo is the content to the ſquare of the diameter; or thus, more exactly: as 355 is to 452, ſo is the content given, to the ſquare of the diameter.

EXAM-

EXAMPLE.

The content is 154, as before; then ſay,

As 355 : 452 :: 154 the content to

154

1808
2260
452

355)69608(196 ſquare of diameter
355
--- extract
3410 196(14 root, or diam.
3195 1
2158 24)96
2130 96
28

This is the exacteſt method, although there is
28 remaining
355

The content of a circle being given to find the circumference.

Rule,

As 7 is to 88, ſo is the content to the ſquare of the circumference.

7 : 88 : : 154
88

1232 extracted, is
1232

7)13552(1936(44 root = to circumf.
7 ... 16

65 84)336
63 336

25 ...
21

42

The content of a circle being given to find the ſide of a ſquare; the content of which ſquare, ſhall be equal to the content of a circle.

Rule,

Extract the Square Root of the given content, and that root is the ſide of a ſquare required.

The content as before, is 154

Extract 15400(12.4 the root, or ſide of a ſquare,
1 equal, as required
22)54
44
244)1000
976
24

The proof, thus,

Side of the ſquare	12.4
	124
	496
	248
	124
	15376
to which, add the remainder	24
the content of the ſquare	154.00

which is equal to the content of the circle, as required.

The diameter of a circle being given to find the ſide of a ſquare; the area of which ſquare, ſhall be equal to the area of the circle of the given diameter.

Rule,

As 113 is to 355, ſo is the ſquare of the diameter to the content required.

EXAM-

EXAMPLE.

7 the semi-diameter

As 113 : 355 :: 7

49 49 square

3195
1420

113)17395(153
113

606
565

445
339

106

106 which, altho' not exactly 154 (the real content), this proportion works nearest the truth of any other.

The diameter of a circle being given, to find the side of a square, which may be inscribed within that circle.

Rule,

Square the diameter, and the root of half the the product is the side of the square required.

EXAMPLE.

The diameter is 14, which ſquared, is 196

14
56
14
2)196)98 half the ſq. of diam.
18
16
16
..

extracted
98(9.8 ſide of the ſq.
81 required
188)1700
1504
196

To find the ſuperficial content of an Oval, as fig. 35.

Rule,

Multiply one diameter by the other, and extract the ſquare root of that product, and that root ſhall be equal to the diſtance of a circle, whoſe ſuperficial content ſhall be equal to the oval given; which may be found as before. See fig. 14.

tranſverſe

transverse diameter 18
conjugate ditto 12

extract the square root of 216(14.6$\frac{284}{286}$ diameter of the circle

1

24)116
96

286)2000
1716

284

To find the content.

As 7 : 22 : : 14 : 6 which is near enough, without the fraction

22

292
292

7)321.2)45.8 circumference
28

·41
35

·62
56

·0

half the circumference, is 22.9
half the diameter, is 7.3

687
1603

the content 167.17
equal to the oval, as required.

Note, The above work is perform'd by the method of decimals; but if you eſteem the diameter and circumference given in feet and inches, you muſt work by that method throughout; but this above (to thoſe acquainted with it) is the moſt conciſe, and alſo correct; and ſaves abundance of trouble, in reſpect to that of ſquaring feet and inches.

Problem 13. Fig. 31.

Three points being given, how to make a circle, whoſe circumference ſhall paſs through the three given points, provided the three points are not in a ſtreight line.

Let A B C be the three points given; firſt, ſetting one foot of your compaſſes in A; open them to any convenient wideneſs, more than half the diſtance between A and B, and deſcribe the arch towards B; with the ſame extent of the compaſſes, ſet one foot alſo in B, and deſcribe the arch towards A, and draw a ſtreight line through the interſection, as in the figure; the very ſame you muſt do between B and C, drawing a line alſo through the two interſections of the arches; then, at the very place where the two lines interſect each other, is the center of the circle required, which is at D; which ſetting one foot of the compaſſes thereon, extend the other to either of the points given, and deſcribe the circle A B C.

Note, The center of a triangle is found the ſame way.

Problem

Problem 14. Fig. 31.

To find the diameter of a circle, by having one part of the diameter given; alſo, having the length of the chord croſſing the diameter in the given part.

Rule,

Square the half of the chord-line, A B, and divide the product by the given part of the diameter, D C, the quotient being added to the ſaid given part, is the length of the diameter required.

EXAMPLE.

Let A C B be a ſegment given, whoſe chord A B, is 36, and the verſed ſine C D, 6; half 36 is 18, which ſquar'd, makes 324; this divided by 6, the quotient is 54; to which add 6, the ſum is 60, the diameter of the circle C E.

See the work.

18	half the chord
18	
144	
18	
6)324	the ſquare of AD
54	the part wanting, D E
6	the verſed ſine C D, added
60	the diameter, C E.

Any

Any ſegment of a circle being given, whoſe chord-line doth not exceed the chord of the quadrant of the ſame circle, to find the content, without finding the diameter, and without deſcribing any more of the circumference, which, in ſmall ſegments, come very near the truth. Let the ſegment given, be fig. 37, whoſe chord-line is A B; and the part of the diameter, cut off by the chord-line, D C, the content of this ſegment is required?

Rule,

Take the whole length of the chord A B, and 3-twelfths of the length of the line D C; to which add, 7-twelfths of the ſame line; then multiply thoſe two lengths, and the product gives you the content.

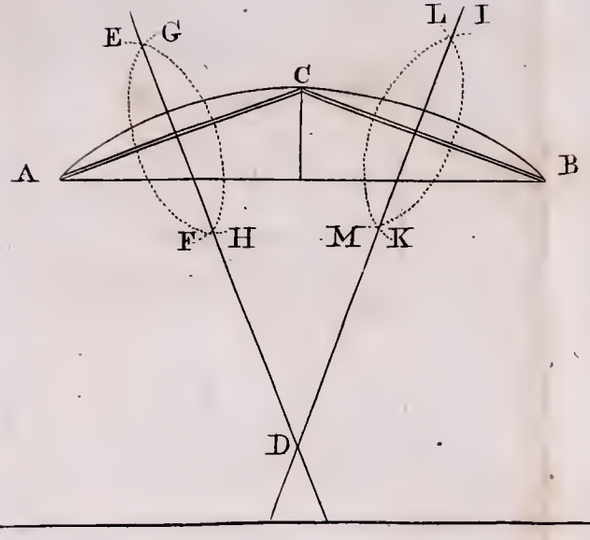
EXAMPLE.

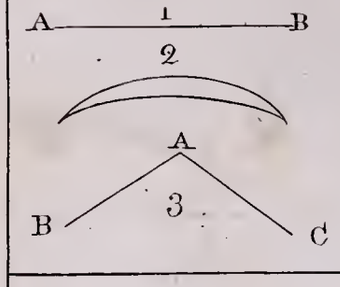
The whole length of the chord, A B, is	36
and two thirds of the length, D C, is	4
to which add, 7-12ths of the ſame line	3·5
the product is	7·5
which, multiplied by the chord, A B,	36
	450
	225
	270.0

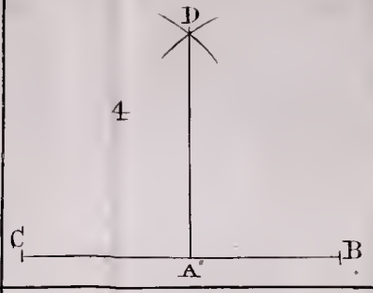
the content thereof, as required.

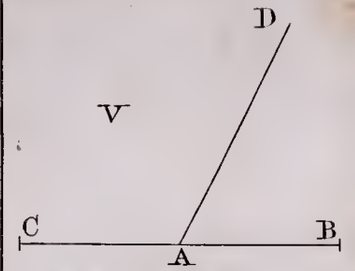
F I N I S.

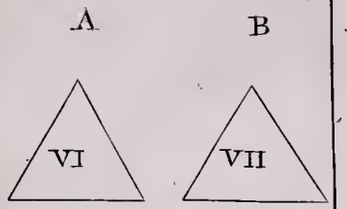
XXXVI

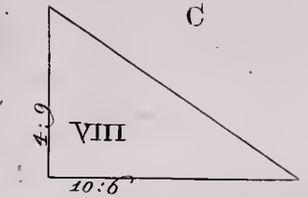


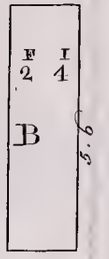


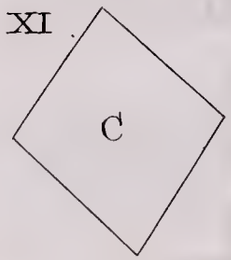


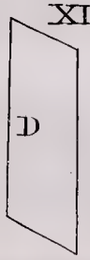


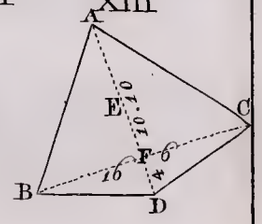


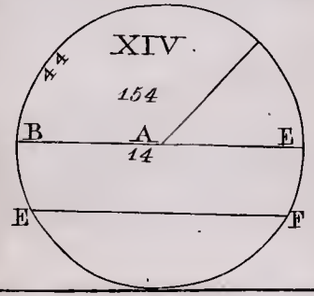


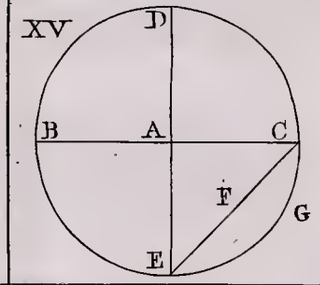












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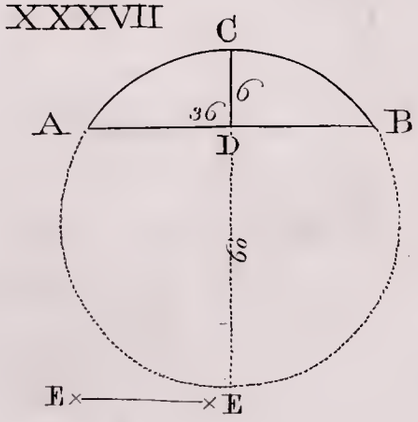

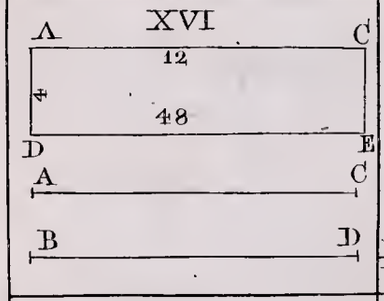

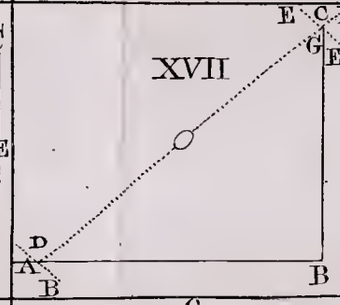

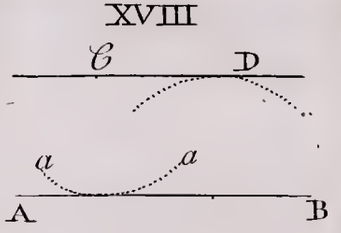

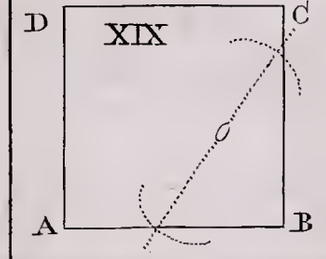

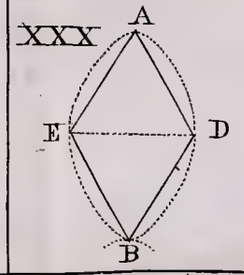

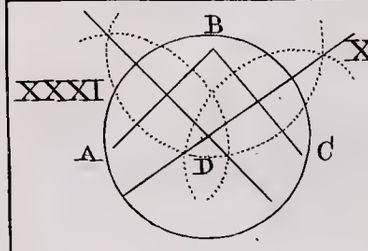

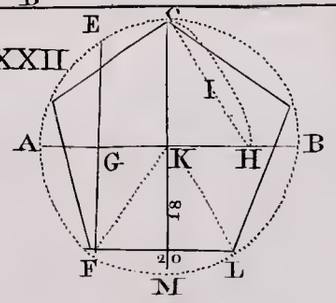

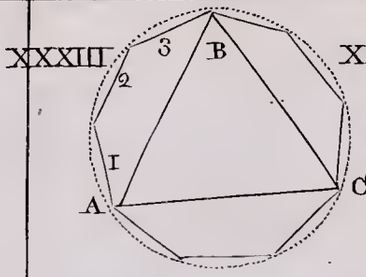

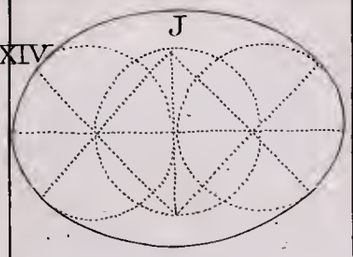

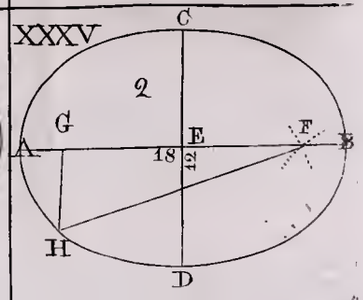

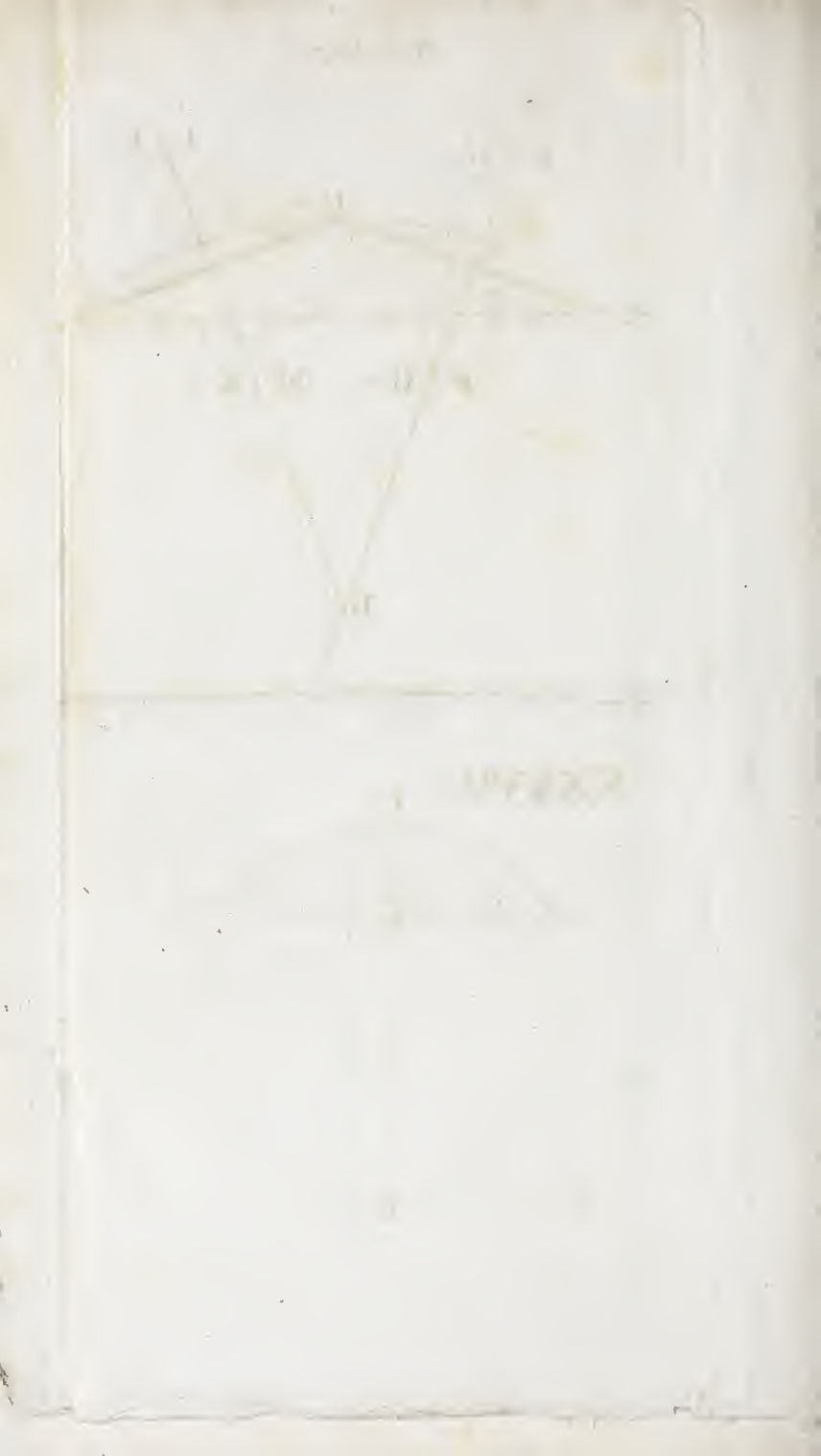

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